
















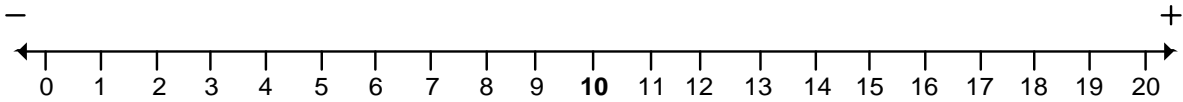
Math Basics for Adults and Near-Adults

Learn to keep track of your money and build
your skills for life and the GED

A Workbook of Addition and Subtraction

I have	\$400		   
I get	+\$100	+	
Now I have	\$500		    
I spent	-\$300	-	  
I end up with	\$200		 

By Emma E. Gunterman



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You can get a copy of **How to Remember Multiplication and Division Facts - A workbook for adults** from the Community Learning Center (also written by Emma Gunterman). It explains multiplication and division in ways that will be familiar from the **Addition and Subtraction** book. Send a \$5.00 donation to cover the cost of shipping and handling to:

Oak Park Community Learning Center (SFBFS)
3300 3d Avenue
Sacramento CA 95817

(Make check payable to Sacramento Food Bank Family Food Bank & Family Services)
Donations in addition to the \$5 are always welcome! The SFBFS does not receive government funding to operate its Community Learning Centers.

Math Basics for Adults - Addition and Subtraction is available on the Internet at <http://www.sfbs.org/pdfs/basicadultmath.pdf>.

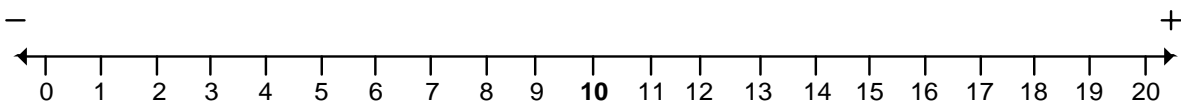
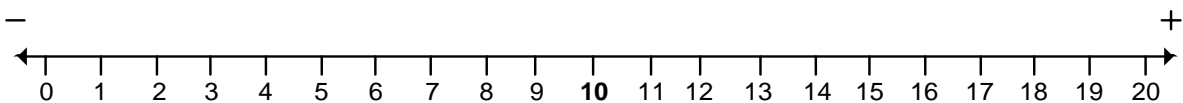
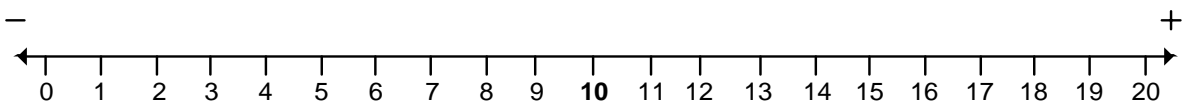


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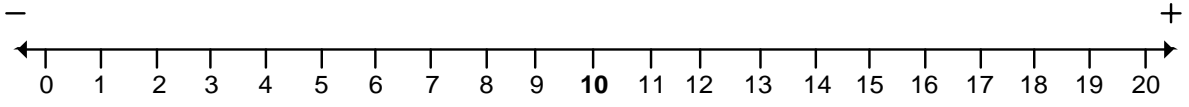
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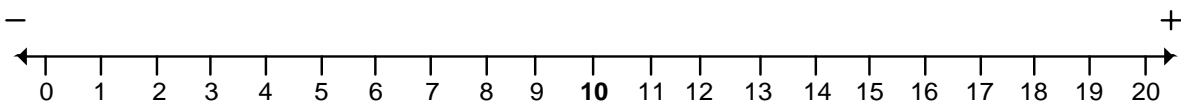


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The Why, How and What of this Workbook

This workbook was written to help adults learn how to add and subtract quickly and accurately for use in daily life, shopping, managing money, passing tests for jobs, or higher education. I felt the need for this kind of workbook after 19 years of helping adults pass their GED or helping them learn basic math. My teaching has been one on one in a not for-profit setting.

Questions and comments from students triggered the different methods and explanations in this workbook. When one way did not work, another had to be found. Understanding the decimal system, that adding and subtracting are opposites, how to check answers, "families" of numbers and uses of the number line all help students understand addition and subtraction. These ideas help students deal with money matters and they are a foundation for math courses at all levels.

It is estimated that one half of all adults who dropped out of school have Learning Disabilities (LD). They are able to learn – some brilliantly. In school they did not get the help they needed. Now, both they and their teachers need to be aware of their specific strengths and weaknesses. However, people in general, not only those with LD, have different ways of looking at problems and need different explanations. We are all different.

Almost every day when I teach I am surprised either by a student's question or by a comment which makes me realize that my explanation was not clear. That is why there are different approaches and repetitions in this workbook. It is obvious that this workbook does not have all the answers. I do feel confident that these pages can help adults. I hope that any student or teacher who wants to make additions or changes to the text will send them to me. Learning and teaching are works in progress.

How to Use this Workbook

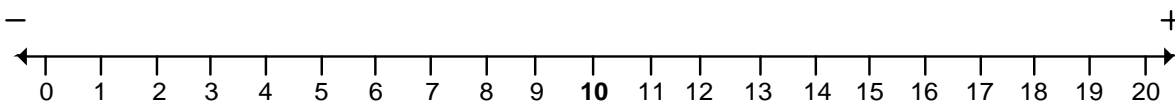
To both students and tutors/teachers:

Adults who will use this workbook will have different backgrounds, different ways of looking at numbers, and different ways of adding and subtracting. Some of the pages with explanations will be clear and helpful to them, other pages may be as clear as mud.

It will be most helpful if both of you (teacher/ tutor and student), slowly and carefully go over all explanations, especially those in the first pages. It will also help if each of you will repeat what is written or discussed and make up some more examples. Together you make the content familiar. That is the goal.

To tutors:

Encourage students to ask questions. In previous settings, questions were often not encouraged, students were not individually encouraged, or they felt too embarrassed. It is most important that students feel comfortable with explanations and understand each step before going on to the next.



Most adults know how to handle money. I am constantly amazed how fast some of my students can subtract \$7 from \$17 in their heads, but they go blank when I ask them to subtract 7 from 17. It is good to have about 20 dimes, 120 pennies on hand, as well as some pretend \$1, \$10, and \$100 bills. Students can use this money to work out problems. For immediate practical use and for more advanced math, it is important that students understand we always use the decimal system, and groups of ten.

When students are doing the exercises, it is necessary to correct each page before the student goes on. We learn through a lot of repetition. When we have a wrong answer in our heads, we first have to replace it with the correct answer. When our heads get cluttered up with wrong answers, it takes us longer to get the correct answers.

Adults who use this workbook have very different basic needs. One group doesn't understand basic concepts of addition and subtraction, the decimal system, etc. They need explanations and examples presented in different ways. This group needs to go over all explanations and directions with you.

Some students in the above group may need additional ways of looking at a problem. For example, several of my students had a difficult time understanding the connection of a number line and positives and negatives. We had to work it out together. Some ideas we used were thermometers, or debt, when it costs more money than you have. We talked about it, drew pictures, it took time!

Another group needs practice so they will know the addition and subtraction "families" of numbers, such as 5, 8 and 13, - so that they will know $13 - 5 = 8$ as fast as they know the 5, 5 and 10 "family". They need practice, practice and more practice to help them deal with daily living needs and math exams accurately and quickly. A blank "triangle" practice sheet for "families" is included in this workbook. It can be copied so that students and/or tutors can make up their own practices with hard to remember "families".

Most students in this group are able to complete practices by themselves. However, it is best if they go over any mistakes with a tutor. Then you will be aware when a process is not fully understood, when the student has to be on the lookout for careless mistakes or of any other roadblocks to success.

To students

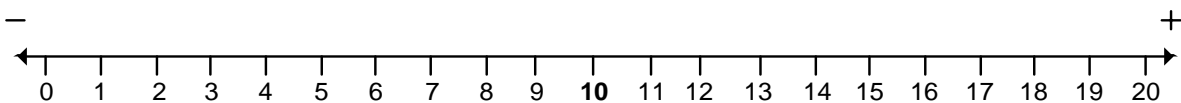
Ask and keep asking until you feel comfortable, understand what you are doing, and can do the work independently. Your questions will give you answers. If you are lucky, you get to explain the problem to someone else. When you are able to explain it to another student, then you know that you really understand it.

Explain to your tutor how you look at a problem.

Do you learn easier through your eyes, your ears?

Do you like to work things out with your hands?

Tell your tutor what works for you and other helpful information about yourself.



I suggest that you read and do your adding and subtracting out loud, even if you only mumble. We learn the words of a song by singing them out loud, not just thinking about them. We can learn math facts by hearing ourselves say them.

One of my students told me that she understood things better when it was read out loud to her. I asked her if she understood it better when she read it aloud to her self. She said yes, but had never thought about that. After that she read everything out loud, (softly, to herself), and her work became easier.

Regular practice is necessary.

Each page should be corrected as soon as it is finished. You don't want your head cluttered up with wrong answers.

Credits and Thanks

The encouraging atmosphere of Sacramento Food Bank and Family Services and the Oak Park Community Learning Center, and especially the encouragement and constructive criticism of its director David Van Gee, made this math workbook possible. My thanks to each student whose question triggered a different explanation, who helped me develop an idea, or who tried out work pages. It is impossible to list all the students who have helped create this workbook with their questions and suggestions over the last year and a half. I've also received help from volunteer tutors and persons who understand the need for this kind of workbook, including professional, special ed. teachers.

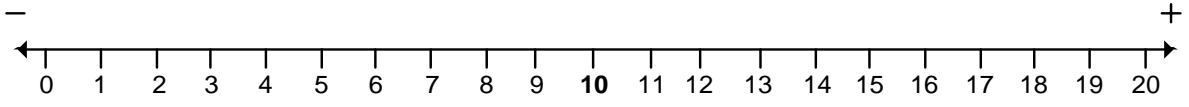
Thanks to Diane Melone for putting this workbook on the Internet.

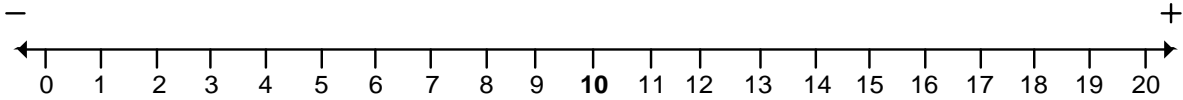
Of course, special thanks go to Loretta Tulley, my original co-worker who put my "How to Remember Multiplication and Division Facts", on a computer. She made it possible for that workbook for adults to be published. Again, her help was invaluable, including her careful editing and attention to details. Special thanks also go to Harriet Miller, our computer whiz, who helped write clear explanations and is responsible for all the graphics. As usual, I thank my husband, Joe Gunterman, who edits all my work, even the first and worst versions.

Thanks to Sacramento Food Bank and Family Services' print shop and its printer, Joe French, for the time, energy and paper that went into making hard copies of this workbook. This support was crucial to making free copies available to our students and others who need this workbook and who otherwise would not have access to it.

Emma Gunterman

To order **How to remember Multiplication and Division Facts**, Workbook for Adults, see bottom of page ii.





Letters, Digits, Place Value, Place Holder

Letters

In English, we use an alphabet with 26 letters. It starts with **a, b, c** and ends with **x, y, z**.

With those letters, we can make all words.

The word **funny** has five (5) letters.

The words **pot** and **top** have the same letters,
but **pot** and **top** have different meanings.

Digits

We write numbers with digits: **0, 1, 2, 3, 4, 5, 6, 7, 8, 9**. We have **10** digits.

With those digits, we can make all numbers.

5 is a one-digit number.


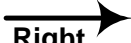
435 is a three-digit number.

When digits are in a different order, numbers have a different meaning:

21 means something different from 12,

543 is different from 345.

Place Value

 Left more value	1 ones 10 tens 100 hundreds	 Right less value
---	--	--

How much a digit is worth depends on its place in the number.

The digit all the way to the right has the smallest value.

They are the **ones**. The digits to the left of the ones have a value of **tens**.

In the number 73, the 7 is worth 7 **tens** or 70. The 3 is worth 3 **ones**.

The digits to the left of the **tens** have a value of **hundreds**.

500 has a value of 5 **hundreds**. It has no **tens** and it doesn't have any **ones**.

In the number 235,	5	The 5 is worth 5 ones
	30	The 3 is worth 3 tens
	+ <u>200</u>	The 2 is worth 2 hundreds
That adds up to	235	Two hundred thirty-five

Place Holder

When we write 5, we have only 5 "ones"

When we write 50, we have 5 "tens" that are worth a lot more than 5 "ones".

The 0 shows there are no "ones" and puts the 5 in the "ten" place.

A child would rather have 20 candies than 2 candies.

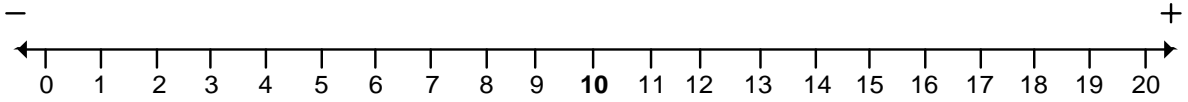
We would rather have \$300 than \$30 or only \$3.

The two zeroes in \$300 show that there are no \$10 dollars ("tens")
and no \$1 dollars ("ones").

The zeroes make us see that \$300 is worth three hundred dollars.

The zeroes are important to show the value of the numbers.

The **zeroes** are called **place holders**.



Counting 10s, 100s, 1,000s and Bigger

We have only ten digits to write all numbers:

0, 1, 2, 3, 4, 5, 6, 7, 8, 9,

When we count by 1 (ones), we use **1 digit**. A single digit is written in the "ones" place. Until we reach 10 we use only one digit.

Place value of:

Ones

I	1
II	2
III	3
IIII	4
IIIII	5
IIIIII	6
IIIIIII	7
IIIIIIII	8
IIIIIIIII	9

Ten (10) is a group of 10 ones.

We use **2 digits** to write 10. When we count by tens, the new digits go into the "tens" place, one place to the left of the ones place.

		Tens
	IIIIIIII	10
	IIIIIIII IIIIIIII	20
	IIIIIIII IIIIIIII IIIIIIII	30
	IIIIIIII IIIIIIII IIIIIIII IIIIIIII	40
	IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	50
	IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	60
	IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	70
	IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	80
	IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	90

One hundred (100) is a group of 10 tens.

		Hundreds
IIIIIIII IIIIIIII	IIIIIIII	100
IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	200
IIIIIIII IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	300
IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	400
IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	500
IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	600
IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	700
IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	800
IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII IIIIIIII	IIIIIIII	900

When we come to 100, we use **3 digits**.

When we count by hundreds we put the new digits in the "hundreds" place, one place to the left of the "tens" place.

To show 200, 300, with little lines would take too much space.

One thousand (1,000) is a group of 10 hundreds.

When we come to 1,000 we use **4 digits**.

When we count by thousands we put the new digits in the "thousands" place, one place to the left of the "hundreds" place.

It would be very confusing to draw 1,000 little lines on this page.

It is a lot easier to write 1,000 than to draw 1,000 little lines.

Thousands

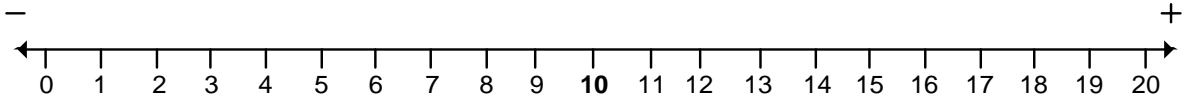
1,000
2,000
3,000
4,000
5,000
6,000
7,000
8,000
9,000

Ten thousand (10,000) is a group of 10 thousands.

Ten thousands

10,000
20,000

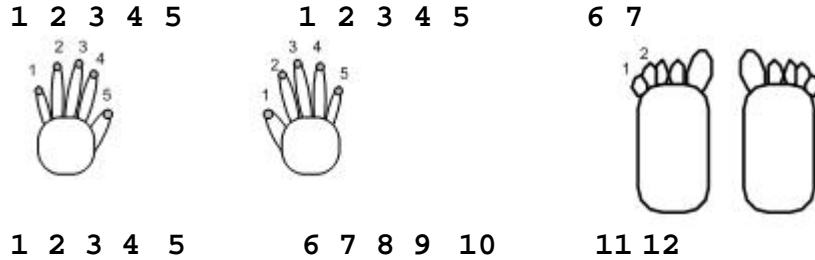
We can keep going on and on. This is high enough for now.



We Count by Tens

Years ago, my sister came into her son, Eric's, room when he was adding. He had his socks off and told her that he did not have enough fingers to add 5 and 7. He needed toes for the answer to $5 + 7$.

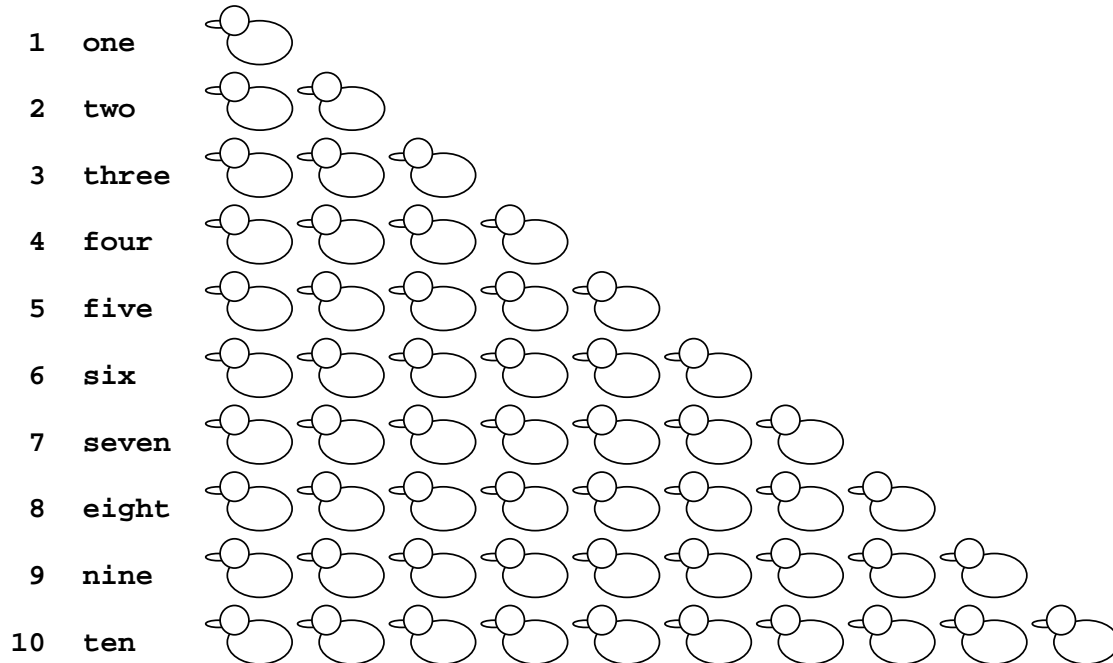
He first counted 5 on one hand. To count 7 he used the other hand and two toes.



Then he counted all his fingers and the 2 toes together and came up with the answer 12. By looking at the 10 fingers and 2 toes, you can see that the 1 in 12 stands for 10, the ten fingers, and the 2 stands for 2 single toes. Did the ten system start because we have ten fingers?

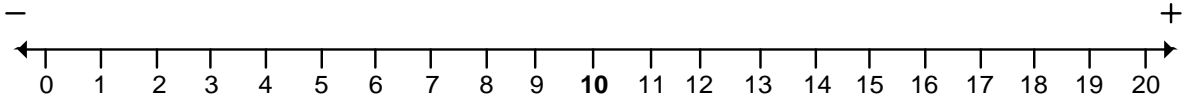
Putting your ducks in a row:

Here is how we count and write numbers.



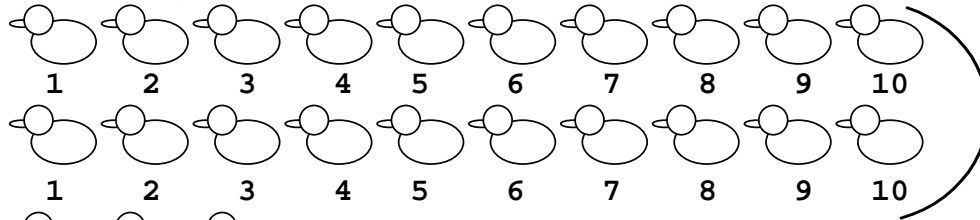
We need two digits to write 10.

The digit at the left tells us that we have 1 (one) group of tens.

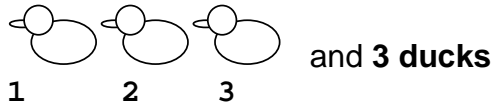


More about tens and place value

We have 2 groups of 10 ducks:



20 ducks



3 ducks

23 ducks

The number **32** uses the same digits as **23**.

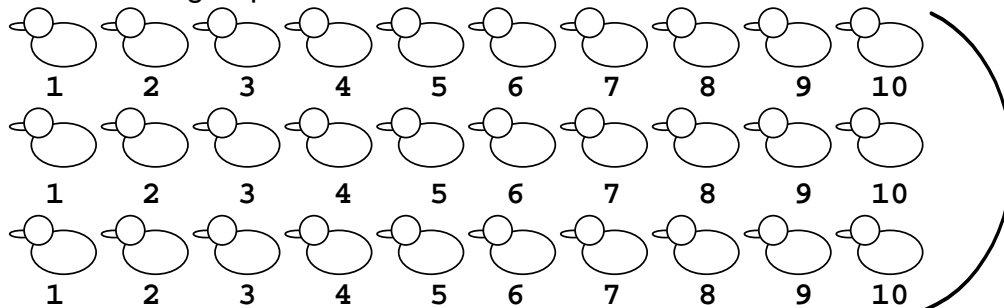
Because the **3** in **32** is in the tens (10's) place, the three is worth **30**.

The **3** in the tens place has a bigger value than the **3** in the ones (1's) place in **23**.

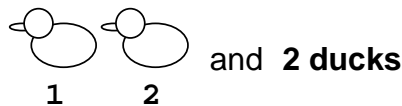
The **3** in the ones place is only worth **3**.

When we have **32** ducks, we have more than **23** ducks.

Below are 3 groups of 10 **ducks**:



30 ducks



2 ducks

32 ducks.

How Many Ducks are on this Page?

To find out how many ducks we have when we have **23** and **32** ducks,

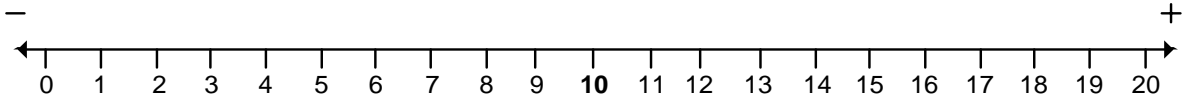
we first count the **2** and **3** ducks which are not in groups of **10**. That gives us **5 ducks**

Then we count the **2** rows and **3** rows of ten ducks, or **20** and **30**. That gives **50 ducks**

In all that makes **55 ducks**

To make sure that there really are **55** ducks, count all the ducks on this page!

It will show how much time we can save by adding numbers to get the answer **55** instead of counting to **55** one by one.



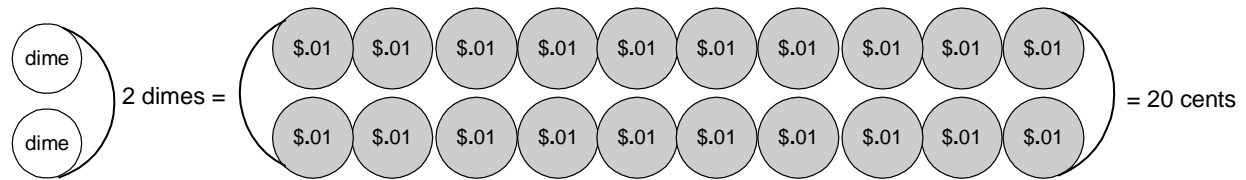
Money, also by Tens

In money, we also count by 10s.



To make it real, use pennies (cents), dimes and dollar bills to count out money as shown below.

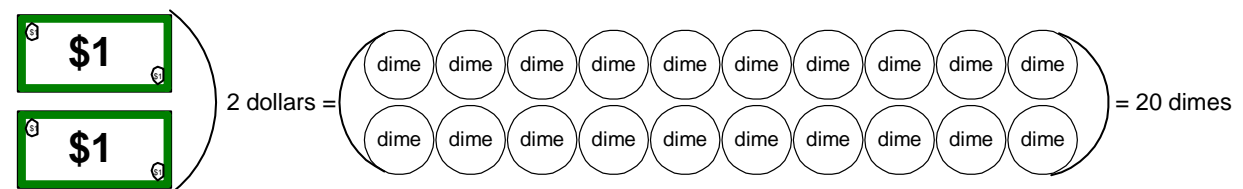
1 dime = 10 cents (pennies) that is like one ten (10) = 10 ones



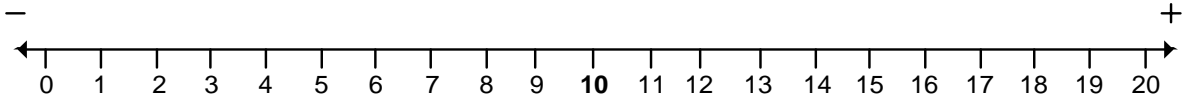
\$1 = 10 dimes



10 dimes = 10 stacks of 10 cents (pennies) = 100 cents = \$1



Can you show with real money that 100 pennies (cents) make \$1?



Writing Down Money

←
Left
more value

When we write money, we put the money with the least value to the right.

→
Right
less value

We put the cents all the way to the right. 1 cent = \$.01

They have the least value.

The cents are left of the dimes. 1 dime = \$.10

A dime is worth 10 cents.

Left of the dimes are the dollars. 1 dollar = \$1.00

A dollar is worth 10 dimes or 100 cents. \$1.00 = 10 dimes

The decimal point separates the dollars from the dimes and cents.

What is more? \$7.21? or \$1.27?

In \$7.21 the 7 stands for 7 dollars or

\$7.00



the 2 stands for 2 dimes or

\$.20



the 1 in .21 means 1 cent or

\$.01



Altogether, that makes

\$7.21

You see that \$7.21 is worth more than \$1.27.

The \$7 in \$7.21 is clearly worth more than the \$1 in \$1.27.

Dollars have a higher value than dimes and cents.

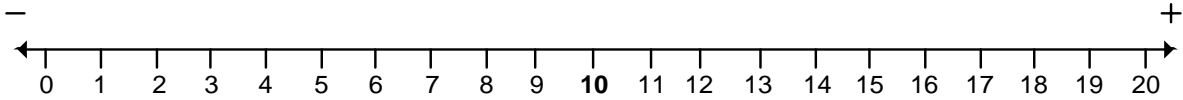
Lining up Money by Value

Jose has 4 dimes, 3 dollars and 7 cents. He will write down the money with the most value to the left and the smaller values to the right. Like this: \$3.47

Everything to the right of the decimal point is smaller than a dollar.

A. Mary has 2 dollars and 6 cents in her piggy bank. Write down how much money she has altogether with a dollar sign (\$).

B. Joe sorted his money and found out he had 6 cents, 8 dimes and 3 dollars. How should he write that down in his account book? **(Answers on page 69.)**



In Daily Life


In our daily lives we often add and subtract. Below is what it looks like.

Adding

When we **add** we put things together.

I have two (2) dollars. 

My friend gives me three (3) dollars. 

Now I have five (5) dollars. 

2 and 3 is 5 We write that as $2 + 3 = 5$

The sign **+** (read: **plus**) shows that you have to put things together, or **add**.

The sign **=** (read: **equals** or **is equal to**) shows that both sides of the **equal** sign are equal. $2 + 3$ has the same value as 5. 5 is the answer to $2 + 3$.

The **answer when you add is called the sum**. 5 is the **sum**.

If I start with three (3) dollars 

I get two (2) more 

I again end up with five (5) dollars 

We write this as:

$$3 + 2 = 5$$

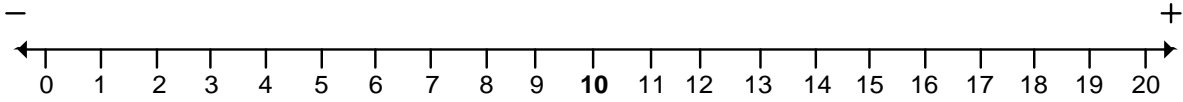
$2 + 3 = 5$ has the same answer as $3 + 2 = 5$

When you add numbers, you can add them in any order you want. The answer will be the same.

The answer is called the **sum**.


The answer will be bigger than each of the numbers with which you started.


There is an exception, if you add zeros, the answer will not be bigger.

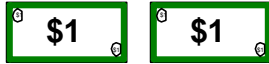


Subtracting

When we **subtract**, we take something away.

I have five (5) dollars: 

I give Mary three (3) dollars: 

Now I have two (2) dollars left. 


5 minus (take away) 3 is 2. We write that as $5 - 3 = 2$

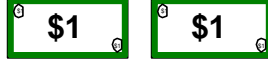
The sign $-$ (read: minus) shows that you have to take away, or subtract.


The sign $=$ (read: equals or is equal to) shows that the two sides of the $=$ sign are equal.
 $5 - 3 = 2$ The answer is 2.

When you **subtract**, the answer is called the **difference**.

When you subtract you cannot turn the numbers around and get the same answer. You have to start with the bigger number and take the smaller away. You cannot start with \$3 and take \$5 away from the \$3.

I have five (5) dollars 

I give Mary two (2) dollars 

Now I have three (3) dollars left 

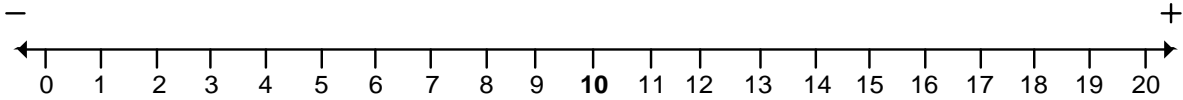
5 minus (take away) 2 is 3. We write that as $5 - 2 = 3$.

The difference between 5 and 3 is 2. **BUT** the difference between 5 and 2 is 3.

As we said above:

We cannot turn subtraction numbers around and get the same answer.

When you subtract, you take something away. What is left is called the **difference**, or the answer. When you subtract the answer will be smaller than the number from which you subtracted. (Unless you subtracted 0.)



Word Problems with Sums and Differences

When you add, you put things together. When you **add**, the answer is **bigger**.

When you add numbers, the answer is called the **sum**.

Example: I have \$2, and you give me \$3. Now I have $\$2 + \$3 = \$5$.

When you subtract, the answer is called the **difference**.

When you subtract you take something away.

When you **subtract**, the answer is **smaller**.

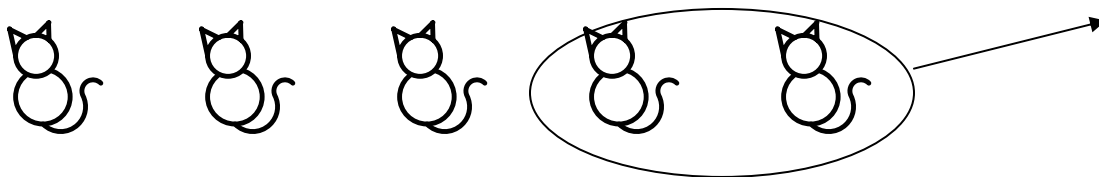
Example: You have \$6 and you give me \$1. Now you have $\$6 - \$1 = \$5$.

In the problems below with the kittens, should you add and get the sum, or should you subtract and get the difference?

A. Mary had 5 kittens. She gave 2 away. How many did she have left?

$$5 - 2 = \underline{\quad}?$$

Did you say 3? That is correct.



B. Now she has 3 kittens. How many more did she give away to have only 1 kitten left?



To have 1 left, fill in $3 - \underline{\quad} = 1$. Did you fill in 2? That is correct.



C. She started with 5. Now she has 1, how many did she give away altogether?

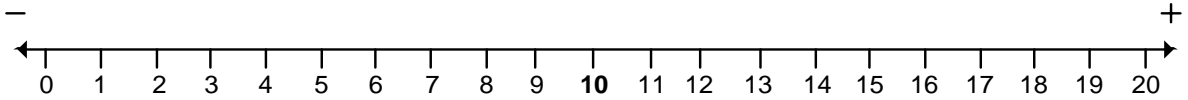
$$5 - \underline{\quad} = 1$$

D. She first gave away 2 and then she gave away another 2.

$$2 + 2 = \underline{\quad}?$$

Altogether, she gave 4 away. She started with 5 and has 1 left.

(Answers on page 69.)



Different Ways to Learn Addition and Subtraction

One way to see what addition and subtraction looks like is to do it with different things. For instance, we can add two pinto beans and three black beans.



You can use beans, nuts, pennies or anything else to show what it looks like when you add and subtract. The drawings are not as clear as when you use something you can put together (add) or take away (subtract) with your hands.

In this workbook, sometimes we use pictures of blocks.

Addition with Blocks

To add, we **put together** 3 blocks and 2 blocks. We get the answer by counting all the blocks.



We write that as:

$$3 + 2 = 5 \text{ (the sum)}$$

Notice that we get the same answer when we put the blocks the other way round.



$$2 + 3 = 5$$

We see that $2 + 3$ is the same as $3 + 2$.

How many blocks do you have when you add two blocks to four blocks?



Please fill in numbers to show the addition in the block picture above:

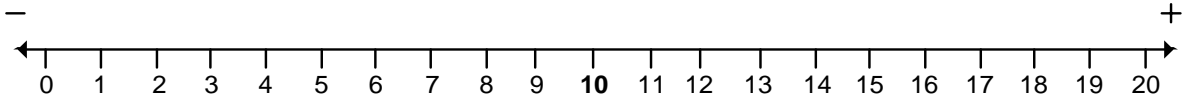
A. $\underline{\quad} + \underline{\quad} = \underline{\quad}$

Draw a picture of blocks to show the sums in the additions below.

B. $4 + 1 = \underline{\quad}$

C. $3 + 4 = \underline{\quad}$

(Answers on page 69.)

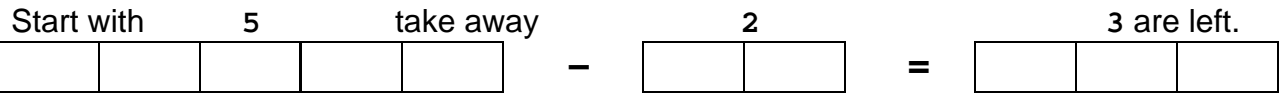


Subtraction with Blocks

To see what happens when you subtract, keep using real things, beans, pennies etc. We use pictures of blocks and money in this workbook.

To subtract we take away. We start with the bigger number and take the smaller number away. We start with the bigger number then put the minus sign, then the smaller number.

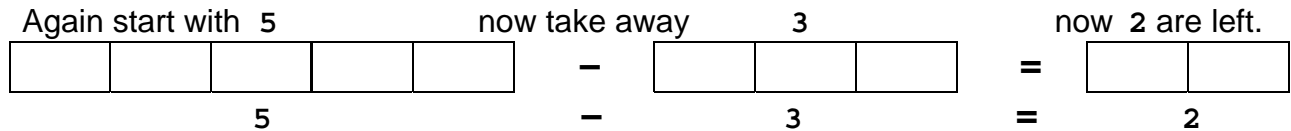
To get the answer when we subtract, we count the blocks that are left after we take blocks away.



We write it as:

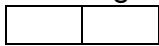
$$5 - 2 = 3$$

We **take away** two blocks and have three blocks left. We **subtract** 2 blocks from 5 blocks. The **answer** 3 is called the **difference**.



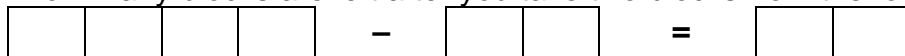
The answer to $5 - 2 = 3$. The answer 3 is not the same answer you would get if you turned it around to $2 - 5$. Taking 5 from 2 is not the same as $5 - 2$.

Starting with 2 blocks, can you take 5 away? I can't.



In subtraction, you cannot turn the numbers around and get the same answer. You have to start with the bigger number and subtract the smaller number.

How many blocks are left after you take two blocks from the four blocks?



Please fill in the numbers to show the subtraction in the block picture above.

A. - =

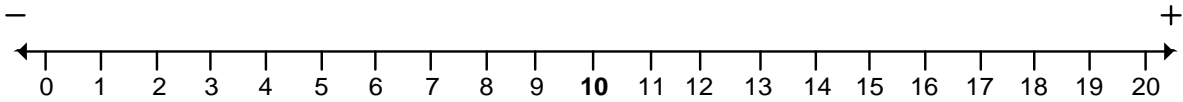
Draw pictures of blocks to show the differences in the subtractions below:

B. $4 - 1 =$

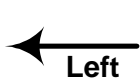
C. $6 - 2 =$

D. $7 - 3 =$

(Answers on page 69.)



Numberlines



When you move to the **right** along the number line above, the numbers get **bigger**.



When you move to the **right**, you move in the **positive**, plus (+) direction.

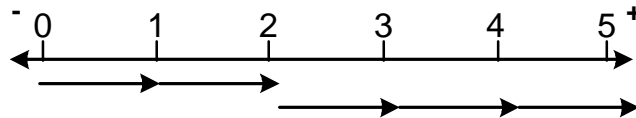
When you move to the **left** along the number line, the numbers get **smaller**.

When you move to the **left** you move in the **negative**, minus (-) direction.

Addition with a Numberline

...is like walking down a road.

First, you walk 2 miles, and then 3 more miles. Altogether, you will have walked 5 miles.

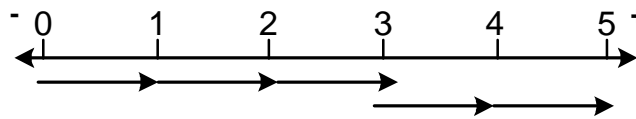


You add by counting the first 2 miles and then count 3 more miles. You will land on 5.

You see that:

$$2 + 3 = 5$$

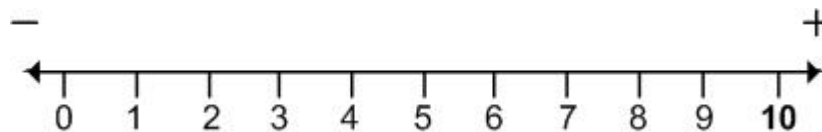
You also see that when you first walk 3 miles and then 2 miles, you will also land on 5.



$$3 + 2 = 5$$

When you turn the numbers around in addition, you get the same answer.

$$3 + 2 = 5 \text{ is the same as } 2 + 3 = 5.$$



Practice on a Numberline use the short one right above

A. $3 + 6 =$

B. $2 + 7 =$

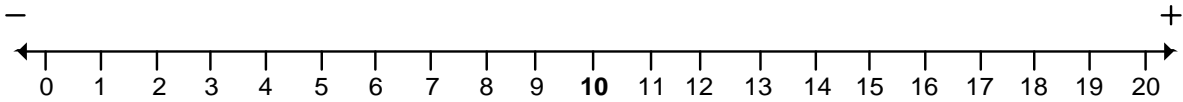
C. $8 + 1 =$

Practice the following additions on the long numberline on top of the page.

D. $6 + 7 =$

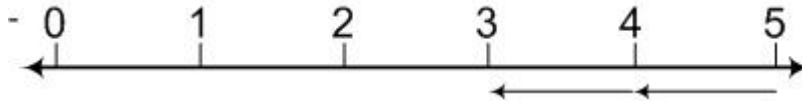
E. $7 + 8 =$

(Answers on page 69.)



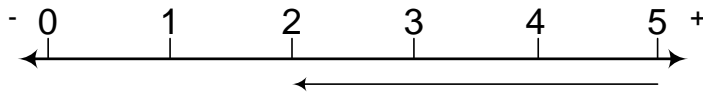
Subtraction with a Numberline

After you walk 5 miles, you walk back 2 miles. Then you will be at the 3 mile mark from where you started.



Subtract, or take away, the miles you walked back. Move 2 spaces to the left, in the (-) negative direction. You are subtracting the 2 miles you walked back, and you land on 3. We write that as $5 - 2 = 3$. We read it as 5 minus 2 is 3. The answer 3 is called the **difference**.

Now you want to find $5 - 3$. You first go to the bigger number and move 3 spaces to the left, in the negative (-) direction. You land on 2.

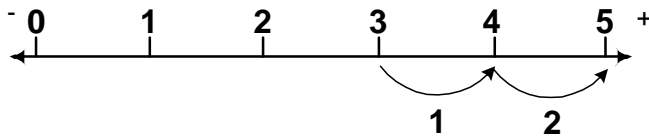


You see that $5 - 2 = 3$.

You see that $5 - 2$ is **NOT** the same as $5 - 3$.

Another way to subtract on numberline

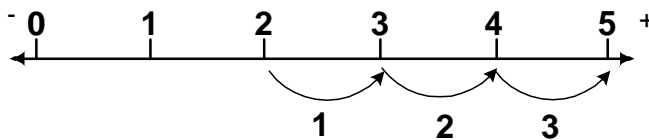
To find the difference between 5 and 3, start on the lower number 3 and count how many spaces it takes to get to 5.



It takes 2 spaces to land on 5.

So the difference between 5 and 3 is 2 or $5 - 3 = 2$

To find the difference between 5 and 2, start on 2, the lower number and count how many spaces it takes to get to 5.



It takes 3 spaces to land on 5.

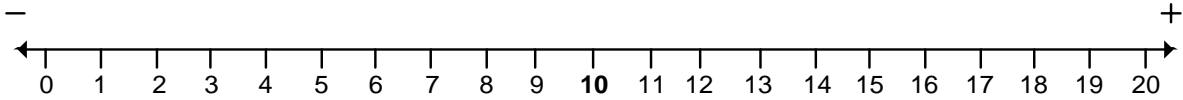
So the difference is 3, or $5 - 2 = 3$

Practice on the Numberline on Top of this Page.

Use whichever way is easiest.

- A. How much is $6 - 2$?
- B. How much is left when you take 3 from 9?
- C. What is the difference between 5 and 7?

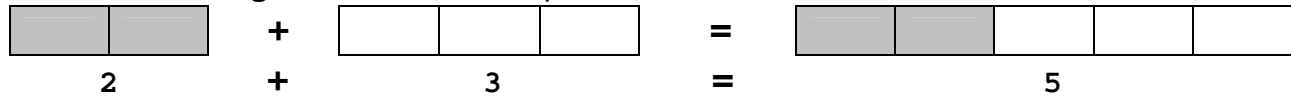
(Answers on page 69.)



Families of Numbers

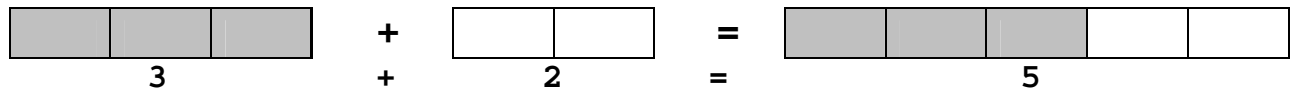
Below is an explanation of what we mean by "families" of numbers.

Start with **adding** 2 and 3 as in the picture below



The + sign goes before the number you are adding.

Now add 3 and 2:



Again the answer is 5, the same as above.

Now **subtract** 3 from 5 or, $5 - 3$. When you subtract, you take 3 away from 5.

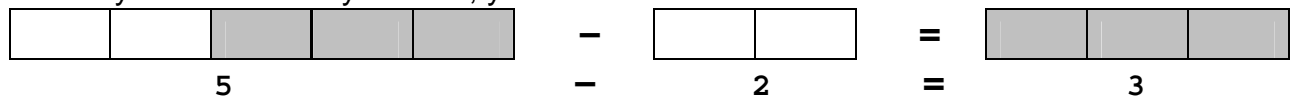
Subtracting is the **opposite** of adding.



When you take 3 away from 5, you are back to 2.

The minus (-) sign goes before the number you take away.

When you take 2 away from 5, you are back to 3.



$$2 + 3 = 5$$

$$3 + 2 = 5$$

$$5 - 3 = 2$$

$$5 - 2 = 3$$

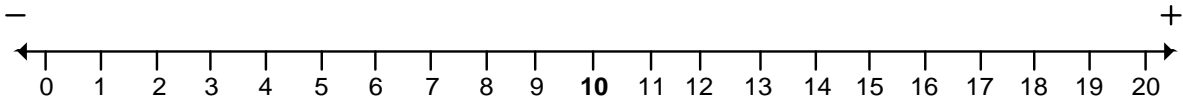
We see that it makes no difference in which order you add.

But we cannot turn the order around when we subtract!
When we have 3 apples we can't take away (- minus) 5 apples.

We keep using the same three numbers: 2, 3 and 5.

We call those three **family members**.

To add and subtract quickly, it helps to know which three numbers belong in the same family. When you have two of the members, the third will be the answer.



Why We Use Families of Numbers

We need to add and subtract quickly in daily living and in order to pass tests.

We use families of three numbers. We can add two numbers and get the third number. That number will be the biggest. Example: We add $1 + 2$, that gives us 3. Now we have three numbers 1, 2 and 3.

Take the biggest number: 3 and subtract one of the small numbers: 1 or 2.

First we subtract 1: $3 - 1 = 2$. Then we subtract: $3 - 2 = 1$

Now we have:

$$\left| \begin{array}{l} 1 + 2 = 3 \\ 2 + 1 = 3 \\ 3 - 1 = 2 \\ 3 - 2 = 1 \end{array} \right|$$

This is a family.

Its family members are 1, 2 and 3.

Pretend that you already learned that 5, 7 and 12 are members of a family.

Now you have to quickly give the answer to $12 - 7$. You will already know right away that the answer is 5, the third member of the family you know.

Let us say that with blocks or on a number line you find out that $6 + 8 = 14$

You will then also know that $14 - 8 = 6$ and that $14 - 6 = 8$

It will help you remember the family members who belong together when you say the additions and subtractions out loud.

When you add the **same** numbers you will need only two lines to make a family. You will be using families with only two different members.

This is how those families will look:

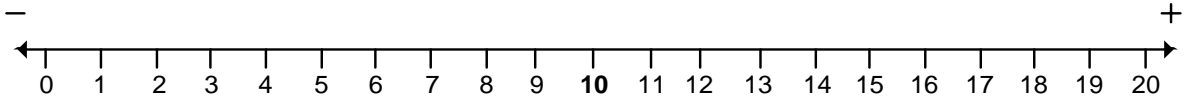
$$\left| \begin{array}{l} 1 + 1 = 2 \\ 2 - 1 = 1 \end{array} \right| \quad \left| \begin{array}{l} 4 + 4 = 8 \\ 8 - 4 = 4 \end{array} \right| \quad \left| \begin{array}{l} 10 + 10 = 20 \\ 20 - 10 = 10 \end{array} \right|$$

When you **add** 0 to a number or **subtract** 0 from that number, the **answer** is the **same** number.

This is how those families will look:

$$\left| \begin{array}{l} 1 + 0 = 1 \\ 0 + 1 = 1 \end{array} \right| \quad \left| \begin{array}{l} 1 - 0 = 1 \end{array} \right| \quad \text{When you add or subtract zero} \\ \text{the number does not change.}$$

Please complete all families with 1s on page 16. You can use the number line, the pictures with blocks, or whatever method is easiest for you. It will help you remember the numbers when you **say the numbers out loud** as you write them down. It is like learning the words of a song when you sing them out loud.



Families with a One (1)

Complete the families below. Use blocks or the number line whichever is easiest.

$$1 + 0 =$$

$$0 + 1 =$$

$$1 - 0 =$$

$$1 + 1 =$$

$$2 - 1 =$$

$$1 + 2 =$$

$$2 + 1 =$$

$$3 - 1 =$$

$$3 - 2 =$$

Complete money problems below

$$1 + 3 =$$

$$3 + 1 =$$

$$4 - 3 =$$

$$4 - 1 =$$

A. 1 dime
+ 3 dimes

$$1 + 4 =$$

$$4 + 1 =$$

$$5 - 1 =$$

$$5 - 4 =$$

$$1 + 5 =$$

$$5 + 1 =$$

$$6 - 1 =$$

$$6 - 5 =$$

B. \$.06
- .05

$$1 + 6 =$$

$$6 + 1 =$$

$$7 - 1 =$$

$$7 - 6 =$$

$$1 + 7 =$$

$$7 + 1 =$$

$$8 - 1 =$$

$$8 - 7 =$$

$$1 + 8 =$$

$$8 + 1 =$$

$$9 - 1 =$$

$$9 - 8 =$$

C. \$ 1
+ 8

D. \$ 9
- 1

$$1 + 9 =$$

$$9 + 1 =$$

$$10 - 1 =$$

$$10 - 9 =$$

E. \$.01
+.09

F. \$.10
- .01

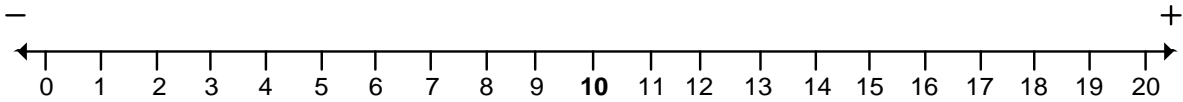
$$1 + 10 =$$

$$10 + 1 =$$

$$11 - 1 =$$

$$11 - 10 =$$

(Answers on page 70.)

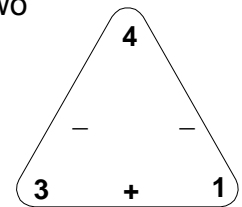


Helpful Triangles

It helps you remember families of numbers to put them in the corners of a triangle. Put the largest number in the family at the top and the other two in the bottom corners. When you add the bottom numbers, the smaller two numbers, you get the top number. When you subtract one of the smaller numbers from the top, the largest number, you will get the other bottom number, the other smaller number.

Here is a triangle with three members of a family: **4** is the biggest and the two smaller numbers are **3** and **1**.

Add **3 + 1**, (the smaller numbers) and you get **4**, or **1 + 3 = 4**
 Take **3**, a smaller number, from **4** and you get **4 - 3 = 1**
 Or take **1**, the other smaller number from **4** and you get **4 - 1 = 3**



How to Use Triangles

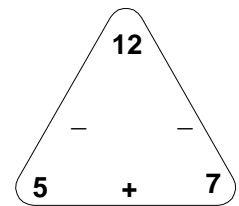
As you do the problems in the following pages, at times you may not remember the additions or subtraction answer right away. To help you remember, use a triangle with the three family members.

Examples:

You have to add **5 + 7** and do not know the answer right away.

You find out on the number line or with blocks that **5 + 7 = 12**.

The three family members are **12**, **5** and **7**. Make a triangle, put **12** in the top, and **5** and **7** in the bottom places.



When you put the three numbers in the corners

SAY them out loud. **LOOK** at them carefully.

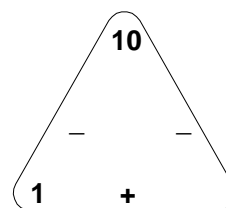
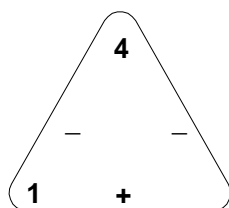
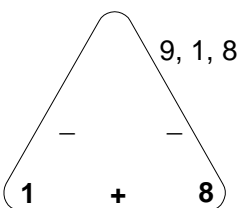
Your ears and eyes will help you remember which three numbers belong to the family.

Practice with Triangles Fill in the empty corner.

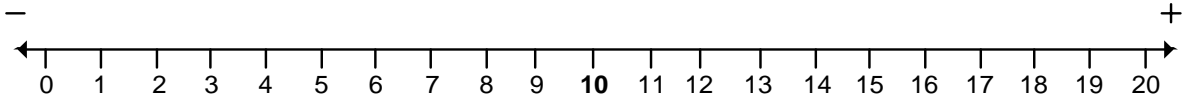
Read the family members out loud after you fill in the empty corner. Then write the family members down next to the triangle.

Example: In the first triangle below, the missing number is **9**. The family members are **9**, **1**, and **8**. Those three numbers are written next to the triangle.

A.



(Answers on page 70.)



Word Problems, Adding and Subtracting

Altogether and **sum** are keywords that tell you that you have to **add**, to put things together.

In adding, the answer will always be bigger than the biggest number unless you add **0**.

Here is an example of a word problem where you have to add:

Johnny had **1** cent. Then he found **2** more cents.

How many did he then have altogether?

To find the answer, we put **1** cent and **2** cents together.

$1 + 2 = 3$. That makes **3** cents.

Then, altogether he had **3** cents.

That is the **answer**, or **sum**. The answer is bigger than either number. Johnny ended up with more than he started with.

The keyword **difference** tells you that you have to subtract, take something away.

The answer will be smaller than the number with which you started.

In the following word problem you have to subtract:

Mary is **3** years old and Isabel is **2** years old. What is the difference in their ages? How much older is Mary?

To find the answer, from Mary's age (**3**) you take away Isabel's age (**2**).

$3 - 2 = 1$ That leaves **1** year.

1 year is the **answer** or **difference** in their ages.

The answer is smaller than the number with which you started.

After you finish this workbook you will know how to add and subtract.

Before you can solve problems, you first have to know whether to add or subtract.

When you think of it, that should be obvious.

You add if you should end up with more.

You subtract if you should end up with less.

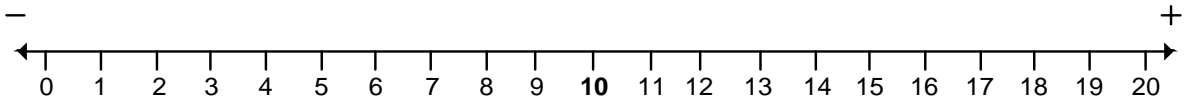
A. How much money do you need to take with you to buy **\$10** dollars worth of apples and a bag of potatoes for **\$4**?

To get the answer did you add or subtract?

B. Bob borrowed **\$7** from Mary. He paid her back **\$5**. How much more does he need to give her to get out of debt?

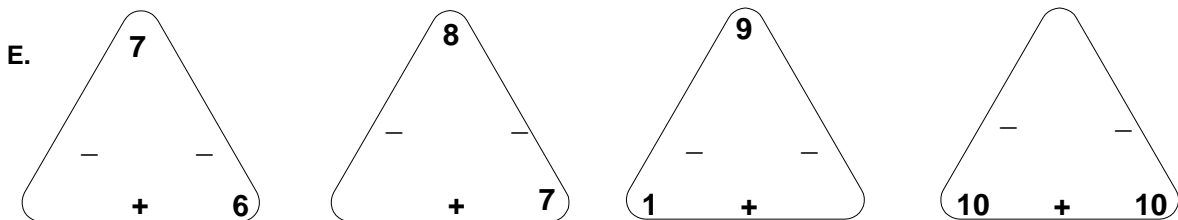
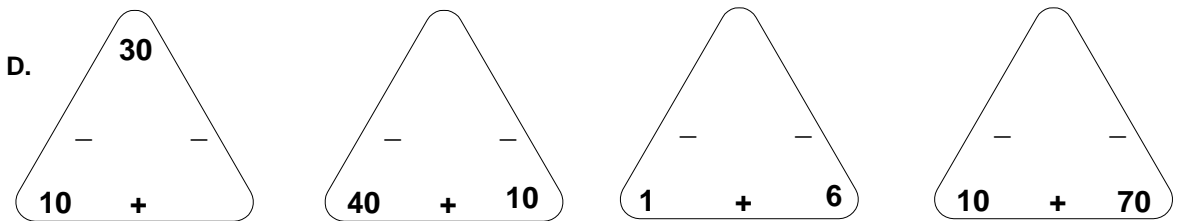
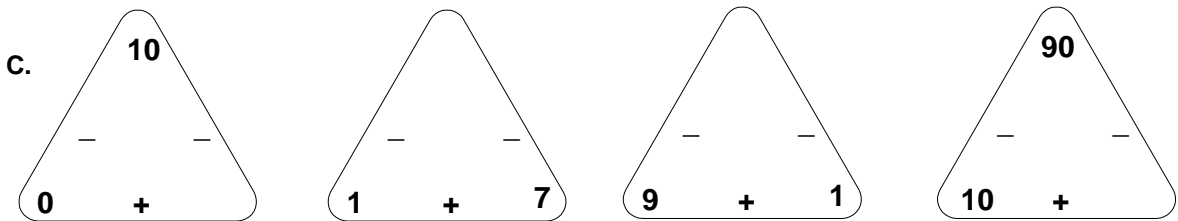
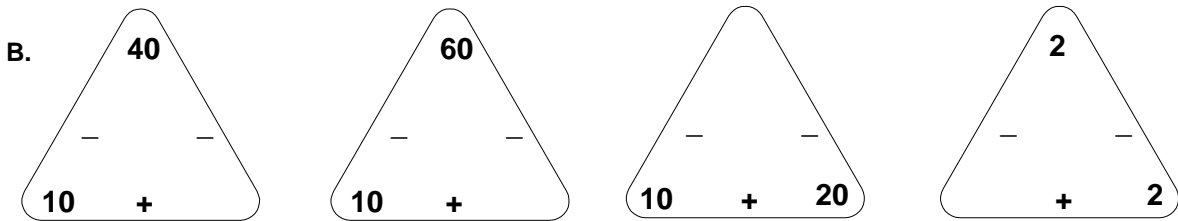
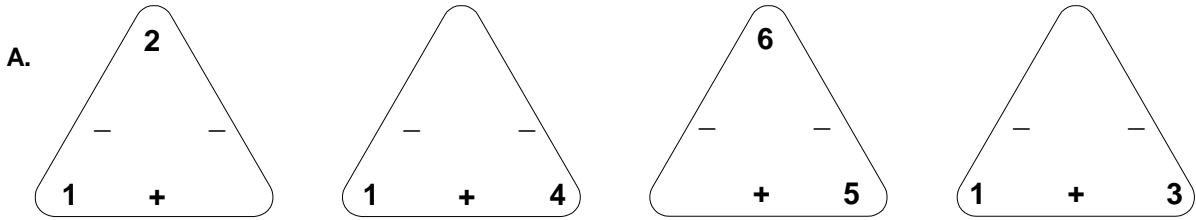
To get the answer did you add or subtract?

(Answers on page 70.)

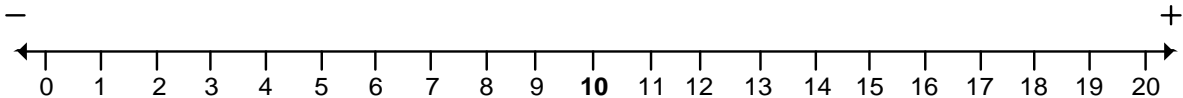


Triangle Practice with 1s and 10s

Fill in the third corner. Add the bottom numbers to get the top number. Subtract the bottom number to get the other bottom number. (Check page 17 if you forgot how to use the triangles.) After you fill in the empty corners, read the family members out loud and write them down next to the triangle.



(Answers on page 71.)



Families with a Ten (10)

Please complete

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 0 = \quad 10 - 0 =$$

$$0 + 10 =$$

Complete money problems below

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 1 = \quad 11 - 1 =$$

$$1 + 10 = \quad 11 - 10 =$$

A. 11 cents - 1 cent =
\$.11 - .01 =

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 2 = \quad 12 - 10 =$$

$$2 + 10 = \quad 12 - 2 =$$

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 3 = \quad 13 - 10 =$$

$$3 + 10 = \quad 13 - 3 =$$

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 4 = \quad 14 - 10 =$$

$$4 + 10 = \quad 14 - 4 =$$

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 5 = \quad 15 - 10 =$$

$$5 + 10 = \quad 15 - 5 =$$

B. \$10 + 15 =
15 - 5 =

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 6 = \quad 16 - 10 =$$

$$6 + 10 = \quad 16 - 6 =$$

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 7 = \quad 17 - 10 =$$

$$7 + 10 = \quad 17 - 7 =$$

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 8 = \quad 18 - 10 =$$

$$8 + 10 = \quad 18 - 8 =$$

C. \$18 - \$10 =
18c - 8c =

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

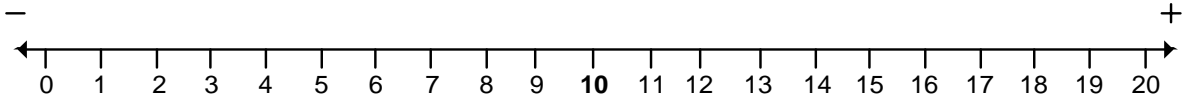
$$10 + 9 = \quad 19 - 10 =$$

$$9 + 10 = \quad 19 - 9 =$$

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$10 + 10 = \quad 20 - 10 =$$

(Answers on page 71.)



Money and 10s Practice

A. I have \$10 and you give me nothing more. I still have \$10

$$\$10 + \$0 =$$

B. Juan has nothing and Pedro gives him \$ 10. How much does Juan have now?

$$\$0 + \$10 =$$

C. What if you have \$10 and I take \$0, or nothing, away from you. What do you have left?

$$\$10 - \$0 =$$

D. 10 cents + 1 cent =

E. 11 cents – 1 cent =

$$F. \$10 + \$2 =$$

$$G. \$3 + \$10 =$$

$$G. \$12 - \$2 =$$

$$H. \$13 - \$10 =$$

The decimal point is important in money.

You know that \$20 is much more than \$.20 (20 cents).



1 cent can be written as \$.01. One dime = 10 cents = \$.10

The digits to the right of the decimal point are smaller than a dollar.

A dime or \$.10 is worth less than \$1.00.

Digits are worth less the farther they are to the right of the decimal point.

\$.01 is worth less than \$.10. One cent is worth less than a dime.

Practice

In the following problems **watch the decimal points.**

$$H. 10 \text{ cents} + 4 \text{ cents} =$$

$$I. \$.04 + \$.10 =$$

$$I. 14 \text{ cents} - 4 \text{ cents} =$$

$$J. \$.14 - \$.10 =$$

$$J. \$10 + \$5 =$$

$$K. \$15 - \$10 =$$

$$L. \$6 + \$10 =$$

$$M. 10 \text{ cents} + 6 \text{ cents} =$$

$$M. \$16 - \$10 =$$

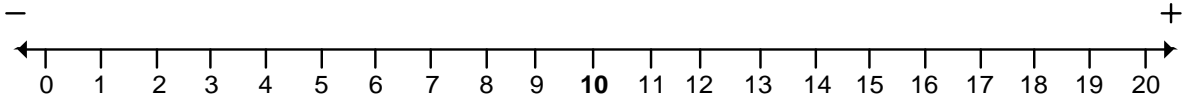
$$N. 16 \text{ cents} - 10 \text{ cents} =$$

Fill in the corners: After you fill in the empty corners, read the family members out loud and write them down next to the triangle. See example on bottom of page 17.

N.

$\begin{array}{r} \$14 \\ - \quad - \\ \hline \end{array}$	$\begin{array}{r} \$19 \\ - \quad - \\ \hline \end{array}$	$\begin{array}{r} \$.17 \\ - \quad - \\ \hline \end{array}$	$\begin{array}{r} \quad \quad \\ - \quad - \\ \hline \end{array}$
$\begin{array}{r} \$4 \quad + \\ \hline \end{array}$	$\begin{array}{r} \quad + \quad \$10 \\ \hline \end{array}$	$\begin{array}{r} \quad + \quad \$.07 \\ \hline \end{array}$	$\begin{array}{r} 1c \quad + \quad 7c \\ \hline \end{array}$

(Answers on page 72.)



The Decimal System

How much a digit is worth (its place value) depends on the column in which it is written. The **1s** in the numbers **1**, **10**, and **100** are worth **one**, **ten** and **one hundred** because they are written in the one, ten and hundred columns. A digit to the left of a digit is worth ten times as much as the digit to the right.

The number system we use is called the **decimal system**. It is used in most of the world. No matter where you are, no matter what language is spoken, practically without exception, adults understand that **103** is smaller than **301**.

We use the decimal system without thinking about it. **\$1** is worth **10** dimes. **1** dime is worth **10** cents. The decimal system was invented by Arabs in the **8th** century. It makes working with numbers for daily living, for arithmetic and algebra a lot easier. If we still used the old Roman system it would be harder.

We only need **10** different digits: **0, 1, 2, 3, 4, 5, 6, 7, 8, 9** and we know how much each number is worth by looking in which place its digits are written.

We know that numbers to the right of the decimal point, as in money, are smaller than those to the left. Example: **\$.40** is worth less than **\$4.00**

Roman Numerals have been around over 2,000 years and are still used here and there. They are put here to show you how much easier our decimal system is. Skip this section if you want.

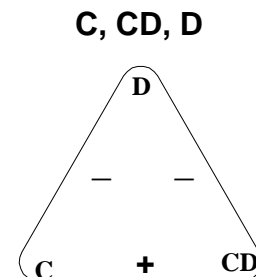
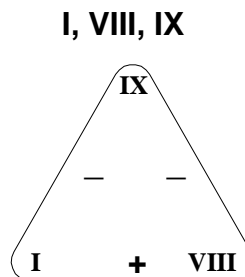
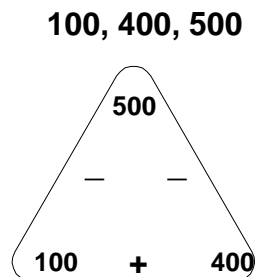
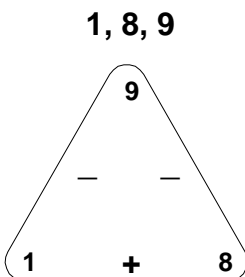
Instead of Roman numerals:

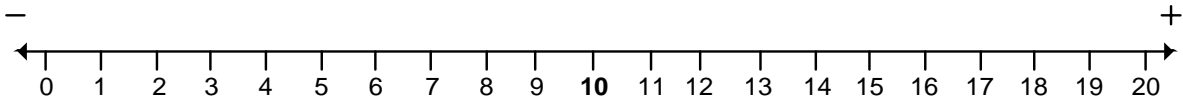
I	II	III	IV	V	VI	VII	VIII	IX	X	XX	XXX	XL	L	LX	LXX	LXXX	XC	C
we use:																		
1	2	3	4	5	6	7	8	9	10	20	30	40	50	60	70	80	90	100

How would you like to add or subtract with Roman numerals?

Instead of $31 + 54 = 85$, you would write **XXXI + LIV = LXXXV**

If the Romans had used triangles the way we are using them in this workbook, their triangles would have looked like the two triangles below at the right instead of like the two triangles on the left.





Place Values, Columns in the Decimal System

We only need **10** different digits: **0, 1, 2, 3, 4, 5, 6, 7, 8, 9** and we know how much each is worth by looking in which place it is written.

Place value describes how much a digit is worth. We talk about the place value of ones, tens, or hundreds. "Columns" tell us how much a digit is worth in a certain place, its place value. We have columns for ones, tens, hundreds, thousands, ten thousands, etc.

10,000s	1,000s	100s	10s	1s	
				1	shows that you have one
			1	0	shows that you have 1 ten and no ones
		1	0	0	1 hundred, no tens, no ones
	1	0	0	0	1 thousand, no hundreds, no tens and no ones
1	0	0	0	0	1 ten thousand, no thousands, no hundreds, no tens and no ones
		4	0	0	shows that you have 4 hundreds
			2	0	shows that you have 2 tens
				3	shows you have 3 ones

Look at the bottom three lines, you can see the values that represent 423.

The digits to the left in a number have a bigger value than those to the right.
The same is true of the digits in money.



In **\$222** the 2 all the way to the **left** is worth **\$200**
the 2 in the middle is worth **\$20**
the 2 all the way to the **right** is worth the **least. \$2**

In **\$.01** The 1 to the **farthest to the right** of the decimal point is only 1 cent.
The cents have the **smallest** money value.

In **\$.10** The 1 is worth 10 cents, it is to the **left of the cents** and worth more.

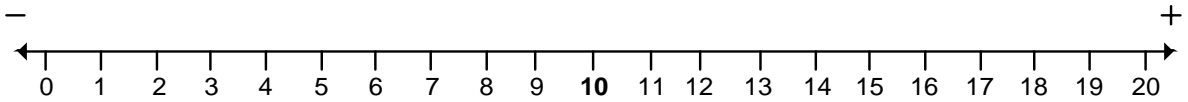
Decimal Points

The decimal system's rule is always true: a move to the left makes the value of the number ten times bigger, a move to the right makes it ten times smaller. Any digits to the right of the decimal point are worth only a fraction (a part) of the digits to its left. **All** numbers to the right of the decimal point, not only numbers describing money, are a part or a fraction of a whole number.

The numbers to the right of the decimal point are called decimal fractions.

In Money A dime or \$.10 is one out of 10 dimes, or $\frac{1}{10}$ (one tenth) of a dollar.

A cent (or .01) is one out of 100 cents, or $\frac{1}{100}$ (one hundredth) of a dollar.



Adding and Subtracting with 1s and 10s

- | | | |
|----------------|-----------|-------------|
| A. \$5 + \$1 = | 7 - 1 = | 1 + 8 = |
| B. 4 + 1 = | 6 - 1 = | 3 + 10 = |
| C. 17 - 7 = | 8 + 10 = | 13 - 10 = |
| D. 7 + 1 = | 5 - 1 = | 18 - 10 = |
| E. 13 - 3 = | 4c + 5c = | \$8 - \$7 = |
| F. 10 - 9 = | 9 - 8 = | 18 - 8 = |

When you add $9 + 1$, you count up to 10. $9c + 1c = 10c$

That answer no longer fits into the ones place. It has two digits.

The 1 goes into the 10's place to show one 10. We say you "carried" the 1.

There will be more about "carrying" and "borrowing" later in the workbook.

Here is how we count by tens:

10, 20, 30, 40, 50, 60, 70, 80, 90 and, whoops, one more ten makes 100.

You see we need one more place for the number 100. 100 needs three digits.

G. $90 + 10 =$ Just like $9 + 1 =$ (Each answer needs one more zero.)

9 groups of 100 plus 1 more group of 100 are 10 groups of 100 or 1000 (thousand).

$900 + 100 = 1000$, one more 0. The 1 moved over one place to the left.

1 million + 9 million is 10 million. $1,000,000 + 9,000,000 = 10,000,000$.

When we write it out in digits, we see that the 1 of the 10 million moves over one place to the left.

You may want to look back to page 2. It shows pictures of groups of 10.

(watch the + and - signs)

H. $70 + 10 =$ $90 + 10 =$ $80 - 10 =$

I. $40 + 10 =$ $80 - 70 =$ $70 - 10 =$

J. $400 + 100 =$ $900 - 100 =$ $700 - 600 =$

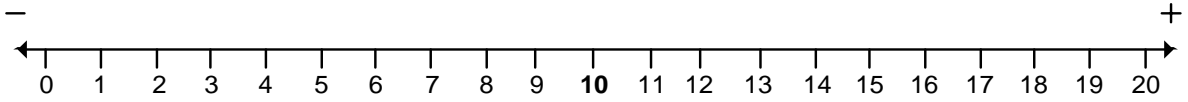
K. $4000 + 1000 =$ $9000 - 1000 =$ $7000 - 1000 =$

or

$4,000 + 1,000 =$ $9,000 - 1,000 =$ $7,000 - 1,000 =$

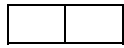
There are two different, correct ways to write thousands. You can write them with or without a comma. 3,000 is correct and so is 3000. **But**, when we write ten thousands, hundred thousands, millions, etc., we **have** to write in a comma between the 3rd and 4th digits, counting from the right. Examples: 20,567 and 43,340,003.

(Answers on page 72)



Families with a Two (2)

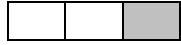
Complete. Use blocks or numberline whichever is easiest.



$2 + 0 =$

$2 - 0 =$

$0 + 2 =$



$2 + 1 =$

$3 - 1 =$

$1 + 2 =$

$3 - 2 =$

Money practice below



$2 + 2 =$

$4 - 2 =$



$2 + 3 =$

$5 - 2 =$

$3 + 2 =$

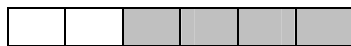
$5 - 3 =$

A. $\$5$

$\$5$

$- 3$

$- 2$



$2 + 4 =$

$6 - 2 =$

$4 + 2 =$

$6 - 4 =$



$2 + 5 =$

$7 - 2 =$

$5 + 2 =$

$7 - 5 =$

B. $\$.70$

$\$.07$

$-.50$

$-.02$



$2 + 6 =$

$8 - 2 =$

$6 + 2 =$

$8 - 6 =$



$2 + 7 =$

$9 - 2 =$

$7 + 2 =$

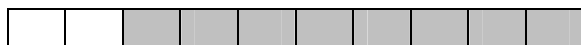
$9 - 7 =$

C. $\$90$

$\$90.00$

-20

$- 70.00$



$2 + 8 =$

$10 - 2 =$

$8 + 2 =$

$10 - 8 =$

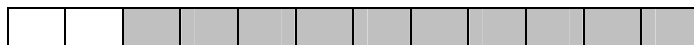


$2 + 9 =$

$11 - 2 =$

$9 + 2 =$

$11 - 9 =$



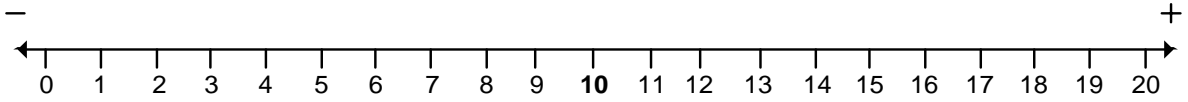
$2 + 10 =$

$12 - 2 =$

$10 + 2 =$

$12 - 10 =$

(Answers on page 73.)



Practice with 2s

Please fill in the empty corners.

After you fill in the empty corners, read the family members out loud and write them down next to the triangle. (See page 17 bottom if you forgot how to use the triangles.)

A.

$\begin{array}{c} 10 \\ - \quad - \\ 8 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 2 \quad + \quad 1 \end{array}$	$\begin{array}{c} \\ - \quad - \\ 2 \quad + \quad 3 \end{array}$	$\begin{array}{c} \$6 \\ - \quad - \\ \$2 \quad + \end{array}$
---	--	--	--

B.

$\begin{array}{c} 6 \\ - \quad - \\ \quad + \quad 4 \end{array}$	$\begin{array}{c} 50 \\ - \quad - \\ 20 \quad + \end{array}$	$\begin{array}{c} 10 \\ - \quad - \\ \quad + \quad 2 \end{array}$	$\begin{array}{c} 11 \\ - \quad - \\ \quad + \quad 9 \end{array}$
--	--	---	---

C.

$\begin{array}{c} 8 \\ - \quad - \\ 2 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 200 \quad + \quad 300 \end{array}$	$\begin{array}{c} 7 \\ - \quad - \\ \quad + \quad 5 \end{array}$	$\begin{array}{c} \\ - \quad - \\ \$.09 \quad + \quad \$.02 \end{array}$
--	--	--	--

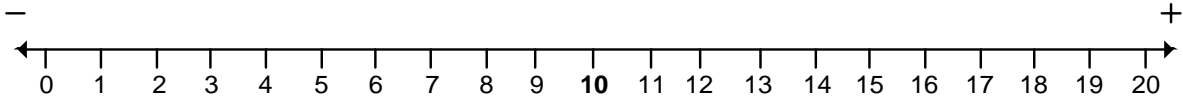
D.

$\begin{array}{c} \\ - \quad - \\ \$7 \quad + \quad \$2 \end{array}$	$\begin{array}{c} \\ - \quad - \\ 2 \quad + \quad 9 \end{array}$	$\begin{array}{c} \\ - \quad - \\ 6 \quad + \quad 2 \end{array}$	$\begin{array}{c} 9 \\ - \quad - \\ 2 \quad + \end{array}$
--	--	--	--

E.

$\begin{array}{c} 10 \\ - \quad - \\ \quad + \quad 2 \end{array}$	$\begin{array}{c} \\ - \quad - \\ \$4 \quad + \quad \$2 \end{array}$	$\begin{array}{c} \$.30 \\ - \quad - \\ \quad + \quad \$.10 \end{array}$	$\begin{array}{c} 4 \\ - \quad - \\ 2 \quad + \end{array}$
---	--	--	--

(Answers on page 73.)



Up and Down or Next to Each Other, Sideways

We can add and subtract by writing the numbers next to each other, sideways.

That is called **horizontally**. It looks like this $1 + 3 = 4$

We can also add and subtract by writing the numbers under each other as below. That is called **vertically**. It looks like this:

$$\begin{array}{r} 1 \\ + 3 \\ \hline \end{array}$$

When we add money, we usually write the amounts under each other, lined up by the decimal points.

We line up our money by putting cents under cents \$0.01
 dimes under dimes \$0.20
 dollars under dollars \$1.00

$$\begin{array}{r} \$.01 \\ + .03 \\ \hline \$.04 \end{array}$$

$$\begin{array}{r} \$.20 \\ + .20 \\ \hline \$0.40 \end{array}$$

$$\begin{array}{r} \$1.00 \\ + 2.00 \\ \hline \$3.00 \end{array}$$

If we have (7 dollars) \$7.30 (three dimes)
 and add (2 dollars) \$2.10 (one dime)
 altogether we will have (9 dollars) \$9.40 (four dimes)

We **added** or put together, the pieces of money in the same column.

In the same way when we **subtract**, we line up the money with the same value in columns:

We have 45 cents
 We take away, **subtract** - 22 cents
 The answer is 23 cents

Practice lining up money When you line up decimal points under each other, then automatically money with the same value will be lined up in columns under each other.

A. $\$3.45 + \2.21 we write as $\begin{array}{r} \$3.45 \\ + \$2.21 \\ \hline \end{array}$ $\$4.36 - \1.21 write as: $\begin{array}{r} \$4.36 \\ - \$1.21 \\ \hline \end{array}$

Complete the following after lining them up first.

Check + and - signs

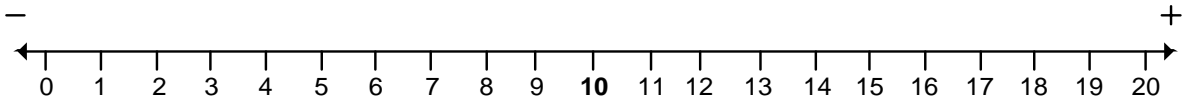
B. $\$24 + \$12 =$

$\$435 - \$22 =$

C. $\$895 - \$683 =$

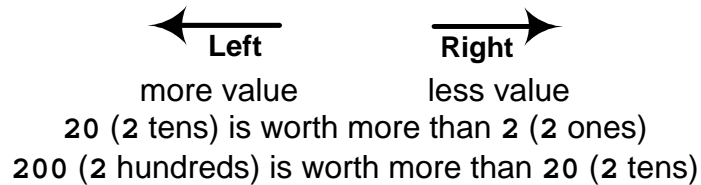
$\$347 + \$12 =$

(Answers on page 73.)



Lining up Numbers

Adding and subtracting is usually easier with the numbers under each other, It is easier because we want to put the digits with the same value together. Putting digits with the same value under each other is called lining up. We are used to doing that with money. Just as with money, numbers to the left have more value than the money to the right



When we add and subtract numbers with several digits, we put ones under ones and tens under tens, hundreds under hundreds, and so on. It is easier to add and subtract when we put numbers under each other

When we add $23 + 12$

We put the 3 ones and the 2 ones in the ones column 23
 The 2 tens and the 1 ten in the tens column + 12
 The answer is 5 in the ones and 3 in the tens column 35

When we add $423 + 12$: we put the 3 ones and the 2 ones in the ones column.

The 2 tens and 1 ten in the tens' column and 423
 The 4 hundreds in the hundreds' column + 12
 The answer is 4 hundreds, 3 tens and 4 ones 435

Practice

Start on the right when you add or subtract. Watch for + and - signs.

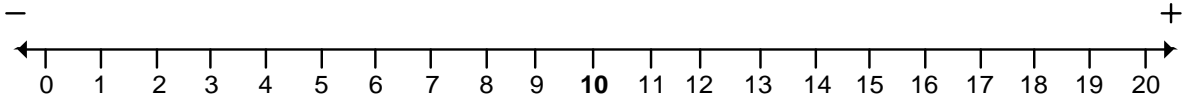


A. $\begin{array}{r} 41 \\ +15 \\ \hline \end{array}$ $\begin{array}{r} 12 \\ +71 \\ \hline \end{array}$ $\begin{array}{r} 13 \\ - 2 \\ \hline \end{array}$ $\begin{array}{r} 29 \\ - 18 \\ \hline \end{array}$

B. I had \$745 I had \$986 I had \$832
 My paycheck is +123 I paid a bill - \$122 I spent -\$122
 Now I have

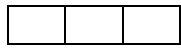
C. John had \$321 Mary has in the bank \$1123
 He paid his rent - 200 She gets paid + 200
 He has left
 For his birthday he got + 25 She paid off her loan - 110
 Now he has? \$ Now she has? \$

(Answers on page 74.)



Families With a Three (3)

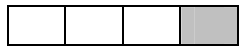
Please complete. Use blocks or numberline, whichever is easiest.



$$3 + 0 =$$

$$0 + 3 =$$

$$3 - 0 =$$



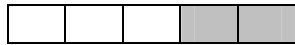
$$3 + 1 =$$

$$1 + 3 =$$

$$4 - 3 =$$

$$4 - 1 =$$

Practice money problems below:



$$3 + 2 =$$

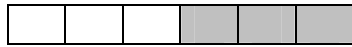
$$2 + 3 =$$

$$5 - 3 =$$

$$5 - 2 =$$

A. $\$3$
+ 2

$\$5$
- 2



$$3 + 3 =$$

$$6 - 3 =$$



$$3 + 4 =$$

$$4 + 3 =$$

$$7 - 3 =$$

$$7 - 4 =$$

B. $\$.07$
- .04

$\$.07$
- .03



$$3 + 5 =$$

$$5 + 3 =$$

$$8 - 3 =$$

$$8 - 5 =$$



$$3 + 6 =$$

$$6 + 3 =$$

$$9 - 3 =$$

$$9 - 6 =$$

C. $\$6$
+ 3

$\$9$
- 3



$$3 + 7 =$$

$$7 + 3 =$$

$$10 - 3 =$$

$$10 - 7 =$$



$$3 + 8 =$$

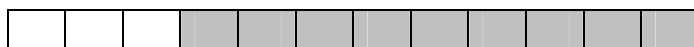
$$8 + 3 =$$

$$11 - 3 =$$

$$11 - 8 =$$

D. $\$.11$
- .08

$\$.11$
- .03



$$3 + 9 =$$

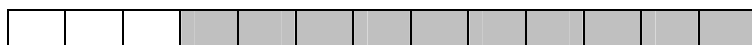
$$9 + 3 =$$

$$12 - 3 =$$

$$12 - 9 =$$

E. $\$9$
- 3

$\$12$
- 3



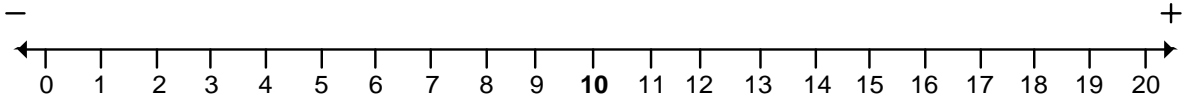
$$3 + 10 =$$

$$10 + 3 =$$

$$13 - 3 =$$

$$13 - 10 =$$

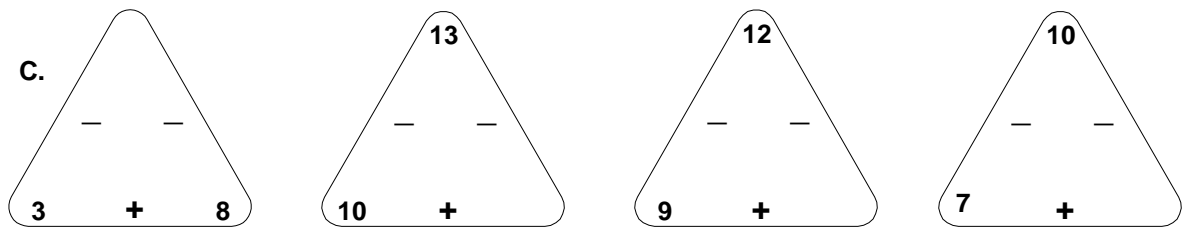
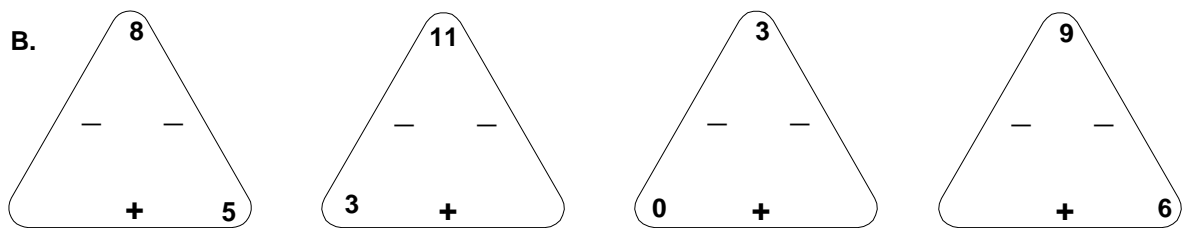
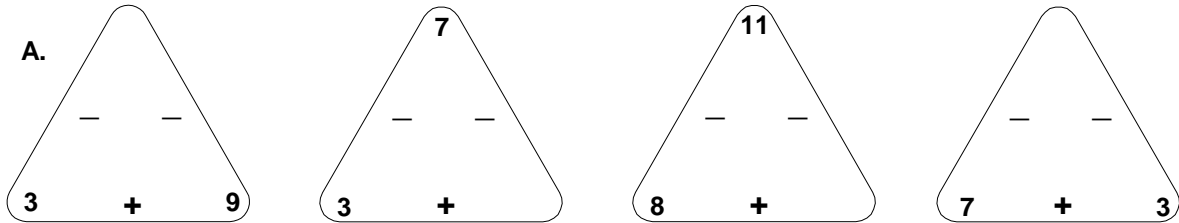
(Answers start on page 74.)



Practice with 3s

Please fill in the empty corners.

After you fill in the empty corners, read the family members out loud and write them down next to the triangle. (See page 17 bottom if you forgot how to use the triangles.)

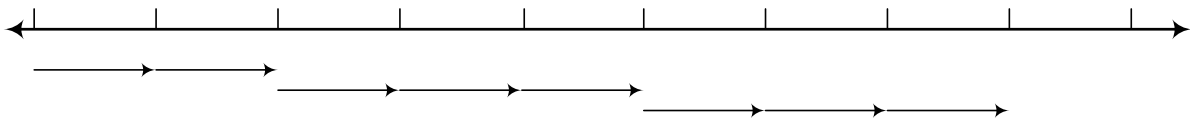


Adding and Subtracting Many Numbers

How much is $2 + 3 + 3$? This is how it would look with blocks:



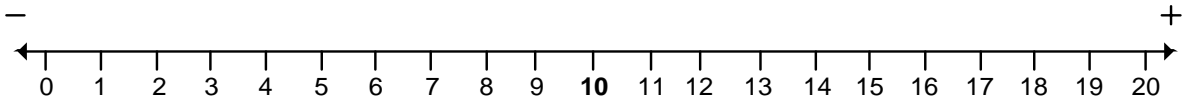
Try it on the numberline:



E. Try doing these in your head. Can you do them quickly?

2	3	1	3	1
1	2	3	1	2
3	1	2	2	3
<u>+ 2</u>	<u>+ 1</u>	<u>+ 2</u>	<u>+ 1</u>	<u>+ 1</u>

(Answers on page 75.)



Practice 1s, 2s, 3s

Watch the + and - signs!

A.	$13 - 1 =$	$9 - 3 =$	$2 + 8 =$	$4 + 2 =$
	$13 - 2 =$	$7 + 3 =$	$9 + 3 =$	$5 + 3 =$
	$13 - 3 =$	$8 + 3 =$	$7 + 2 =$	$8 + 3 =$
	$12 - 3 =$	$10 - 3 =$	$3 + 8 =$	$3 + 6 =$

B.	$12 - 2 =$	$10 - 2 =$	$2 + 6 =$	$9 + 2 =$
	$8 + 2 =$	$10 - 1 =$	$7 + 3 =$	$8 + 2 =$
	$8 + 3 =$	$7 - 1 =$	$4 + 3 =$	$3 + 2 =$
	$11 - 3 =$	$7 - 3 =$	$2 + 4 =$	$2 + 7 =$

C.	$11 - 2 =$	$6 + 3 =$	$5 + 2 =$	$3 + 7 =$
	$9 + 2 =$	$9 - 3 =$	$2 + 9 =$	$3 + 9 =$
	$9 + 3 =$	$9 - 2 =$	$6 + 3 =$	$3 + 4 =$
	$12 - 3 =$	$7 - 3 =$	$11 - 9 =$	$6 + 2 =$

D.	$12 - 2 =$	$6 + 3 =$	$6 + 3 =$	$5 - 3 =$
	$11 - 1 =$	$9 - 3 =$	$2 + 3 =$	$9 - 3 =$
	$8 - 6 =$	$9 - 2 =$	$12 - 9 =$	$11 - 9 =$
	$7 - 4 =$	$7 - 3 =$	$10 - 7 =$	$7 - 2 =$

E.	$11 - 8 =$	$3 + 4 =$	$9 - 7 =$	$6 - 4 =$
	$9 - 2 =$	$3 + 5 =$	$5 - 2 =$	$7 - 3 =$
	$12 - 3 =$	$1 + 5 =$	$10 - 2 =$	$10 - 3 =$
	$10 - 8 =$	$3 + 6 =$	$11 - 2 =$	$8 - 6 =$

F.	$\begin{array}{r} 413 \\ - 213 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ - 11 \\ \hline \end{array}$	$\begin{array}{r} 321 \\ -121 \\ \hline \end{array}$
----	---	--	---	--

Practice lining up more than two numbers

G. Example: $14 + 732 + 123$ First line it up like this:

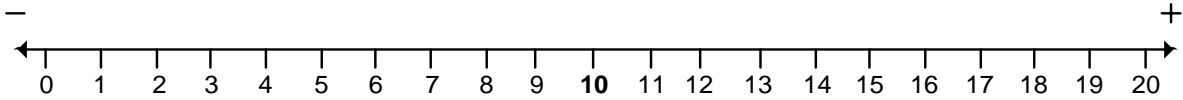
$$\begin{array}{r} 14 \\ 732 \\ + 123 \\ \hline \end{array}$$

Line them up first:

H. $\$34 + \$33 + \$21 =$ $23 + 744 + 2 =$

I. $123 + 31 + 421 =$ $\$5.12 + \$2.32 + \$.23 =$

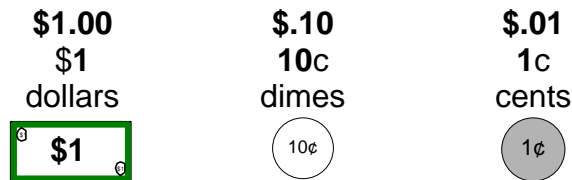
(Answers start on page 75.)



Get Change to Practice Carrying, Borrowing or Regrouping

We recommend that you get a few more than **20** dimes and about **130** cents. Write **\$1** on little rectangles of paper to use as dollar bills. Then practice adding and subtracting with that money.

You will see what carrying and borrowing, also called regrouping, is all about. It sounds confusing but is as simple as changing 10 cents into 1 dime or changing 1 dollar into 10 dimes. We put money with different values in different columns just as we do digits with different place values.



Changing Money and Carrying

$$10 \text{ cents} = 1 \text{ dime} = \$.10$$

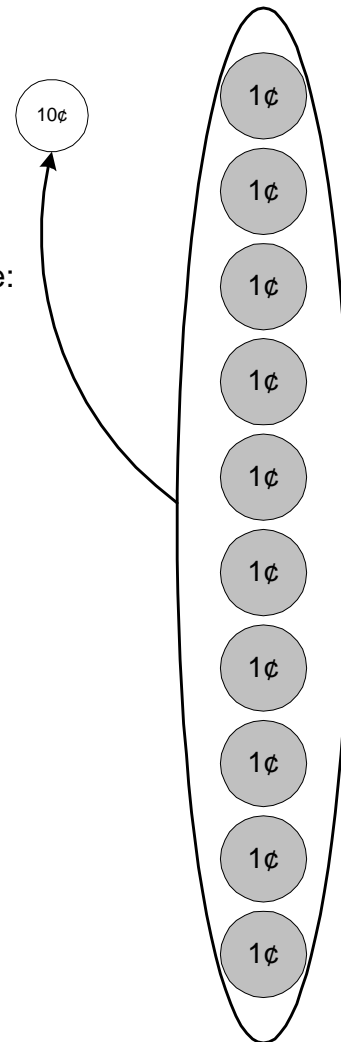
When you have 9 cents and can get 1 cent more you can change the 10 cents to 1 dime.

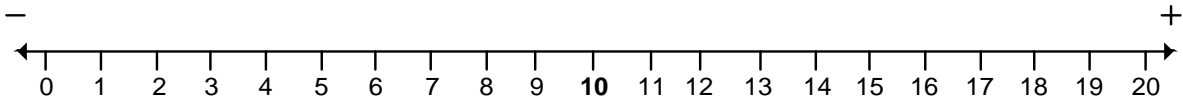
In money that looks like this picture:

In arithmetic we say that we “carried” the **1**, combining the **10** ones into the ten column. We also call it **regrouping**. We regrouped the 10 ones into 1 ten.

When we write it down, we put the 1 of 10 cents into the dime column. It moved from the cents column into the dimes column.

$$\begin{array}{r}
 1 \\
 \$ 09 \\
 + 01 \\
 \hline
 \$ 10
 \end{array}$$

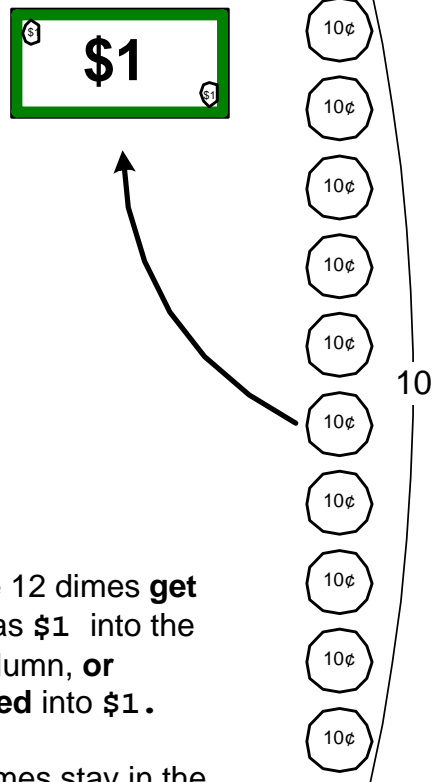




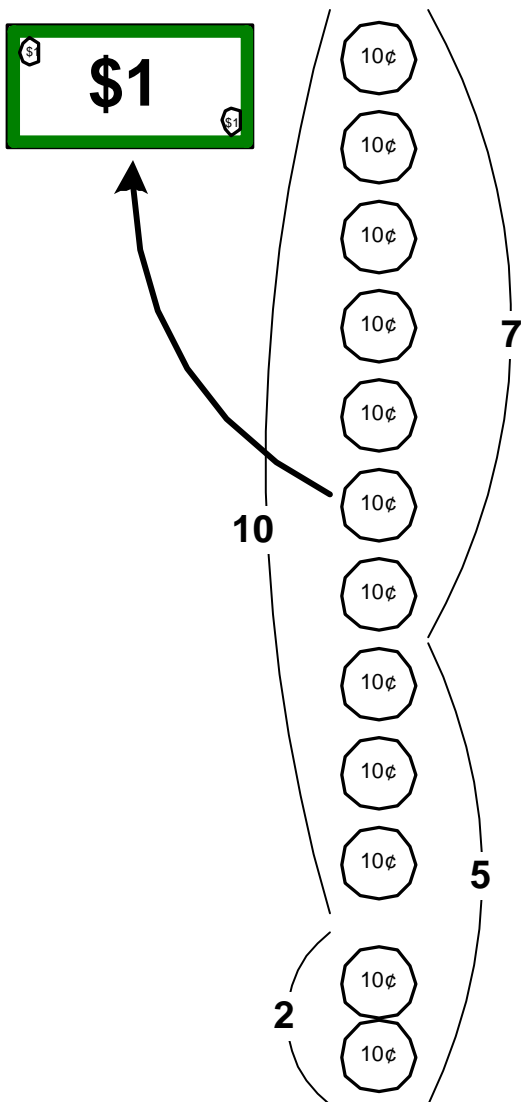
More Carrying with Money

Use dollar bills and dimes.

Ten dimes make a dollar. This is what it looks like:



Below we add 7 + 5 dimes to give us 12 dimes.



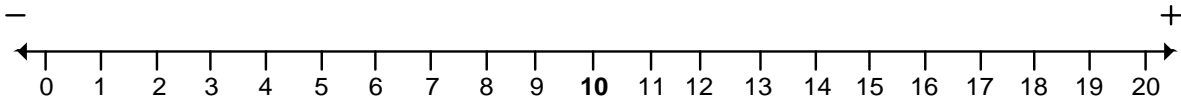
10 of the 12 dimes **get carried** as \$1 into the dollar column, **or regrouped** into \$1.

The 2 dimes stay in the dimes column.

The answer is \$1.20

Here is how we write it:

$$\begin{array}{r}
 \$ \overset{1}{} . 70 \quad = 7 \text{ dimes} \\
 + . 50 \quad = 5 \text{ dimes} \\
 \hline
 \$1 . 20
 \end{array}$$



Carrying when Adding Numbers

When we add $2 + 3$ vertically
 the **2** and **3** go into the **ones** place
 and so does the answer.

$$\begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$$

But when we add $9 + 1$ the answer **10** has two digits.
 The **1** of the ten moves over into the tens place.
 Just as 10 cents moves into the dimes place.
We call that carrying or regrouping.

$$\begin{array}{r} 1 \\ 9 \\ + 1 \\ \hline 10 \end{array}$$

Add $29 + 1$. Put the numbers under each other.
We start on the right



We add the ones, $9 + 1 = 10$.
 We put the **0** in the ones place, in the answer line.
 We carry the **1** of the **10** to the top of the **10s** column.
 Now we have $1 + 2$ tens, or **3** tens for the answer.

$$\begin{array}{r} 1 \\ 29 \\ + 1 \\ \hline 30 \end{array}$$

Another example: $23 + 29$ Put the numbers under each other:

Add the ones $3 + 9 = 12$.
 Write the **2** in the ones place in the answer line.
 Carry the **1** of **12** to the top of the **10s**.
 Add the **10s**, $1 + 2 + 3 = 6$ tens. Write the 6 in the tens
 place in the answer line.
 The full answer is **62** in the answer line.

$$\begin{array}{r} 1 \\ 23 \\ + 29 \\ \hline 62 \end{array}$$

Practice

A.

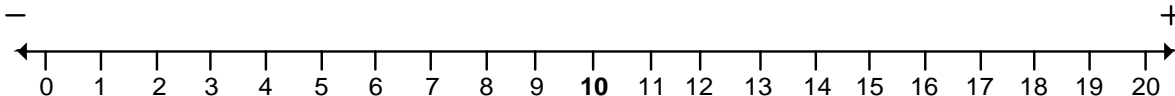
$$\begin{array}{r} 23 \\ + 39 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ + 86 \\ \hline \end{array} \quad \begin{array}{r} 17 \\ + 43 \\ \hline \end{array} \quad \begin{array}{r} 143 \\ + 38 \\ \hline \end{array}$$

With Money

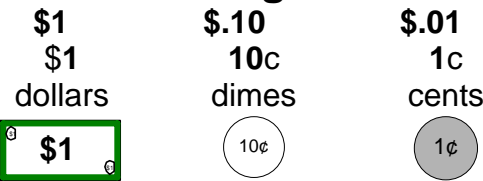
B.

$$\begin{array}{r} 43 \text{ cents} \\ + 9 \text{ cents} \\ \hline \text{cents} \end{array} \quad \begin{array}{r} 25 \text{ cents} \\ + 15 \text{ cents} \\ \hline \text{cents} \end{array} \quad \begin{array}{r} \$3.70 \\ + .30 \\ \hline \$ \end{array} \quad \begin{array}{r} \$48 \\ + 32 \\ \hline \$ \end{array}$$

(Answers on page 76.)

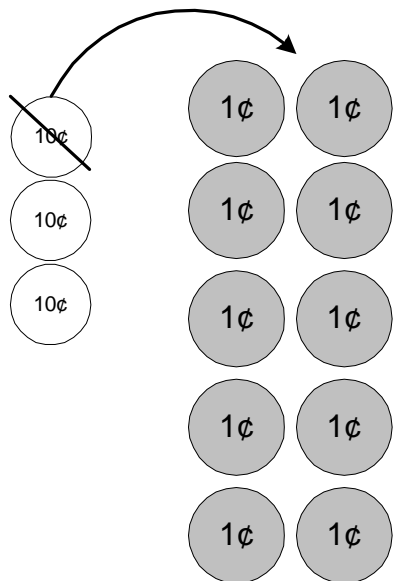


Changing Money and Borrowing



When you borrow you change the bigger coin into 10 smaller coins.
 1 dime becomes 10 cents. Or, we say: we **regroup** the 1 dime into 10 cents.

You need to **borrow**, when you **subtract**. **Borrow** from your rich neighbor on yoursz.



Let's say Johnny has 3 dimes and has to give 2 cents to Mary.

Look at the picture to the left. So that he can give her 2 cents, he has to change 1 dime into 10 cents (**borrow** or **regroup**).

Now he can take the 2 cents away from the 10 cents

$$\begin{array}{r}
 \$.10 \\
 - .02 \\
 \hline
 \$.08 \text{ (cents)}
 \end{array}$$

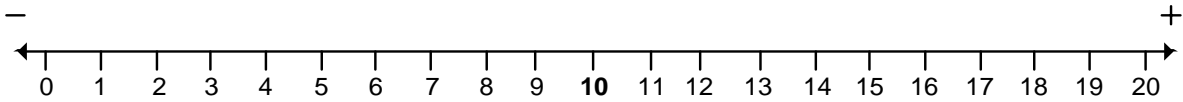
This is how we write it when we borrow:
 We cross out the 3 of the 3 dimes (borrow 1 dime from the dimes place).
 Write a 2 in the dimes place.
 Write a 1 a little to the left of the 0 in the cents place.
 That shows you have 10 cents in that place.
 Take 2 cents from the 10 cents.
 That leaves you 8 cents and 2 dimes, or 28 cents.

$$\begin{array}{r}
 \overset{2}{\cancel{3}} \overset{1}{0} \\
 - \$. \overset{1}{0} 2 \\
 \hline
 \$. 2 8
 \end{array}$$

Below is another example.

$$\begin{array}{r}
 \overset{3}{\cancel{4}} \overset{1}{1} \\
 - \$. 2 2 \\
 \hline
 \$. 1 9
 \end{array}$$

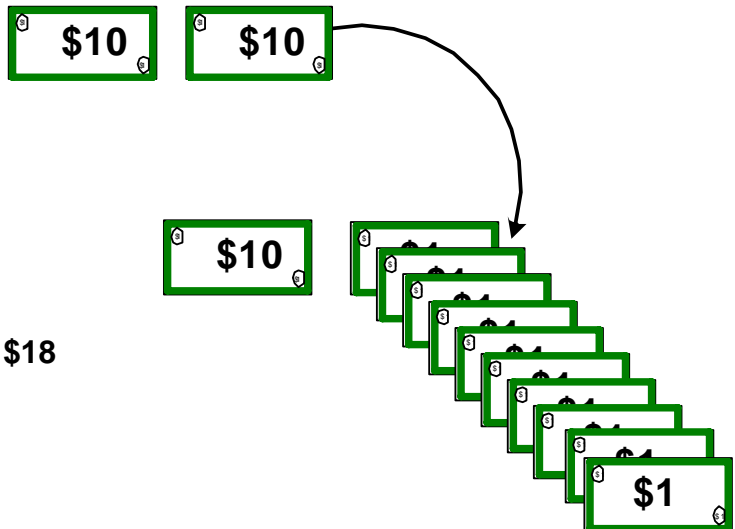
You cannot take 2 cents from 1 cent.
 Borrow 1 dime from the 4 dimes. That leaves 3 dimes.
 Turn the dime into 10 cents.
 With the 1 cent you started with, that makes 11 cents.
 Now we subtract the 2 cents from the 11 cents.
 That leaves 9 cents.
 Subtract the 2 dimes from the 3 dimes left.
 That leaves 1 dime.



Practice Borrowing when Subtracting Money

We have 2 ten dollar bills or \$20.

We want to give a friend \$2.



We have to change one ten dollar bill into ten one dollar bills.

We call that **borrowing** or **regrouping**.

Now we can give my friend \$2.

How many dollar bills do we have left?

$$\$10 - \$2 = \$8$$

Altogether we now have $\$10 + \$8 = \$18$

We write that as

$$\begin{array}{r} 10 \\ \cancel{2} \\ - 2 \\ \hline 18 \end{array}$$

Practice:

A. $\begin{array}{r} 42 \text{ cents} \\ - 9 \text{ cents} \\ \hline \end{array}$ $\begin{array}{r} \$.53 \\ - .18 \\ \hline \end{array}$ $\begin{array}{r} \$.42 \\ - .08 \\ \hline \end{array}$ $\begin{array}{r} \$51 \\ - 8 \\ \hline \end{array}$

B. $\begin{array}{r} \$4.21 \\ - 1.09 \\ \hline \end{array}$ $\begin{array}{r} \$3.41 \\ - 1.02 \\ \hline \end{array}$ $\begin{array}{r} \$4.20 \\ - .30 \\ \hline \end{array}$ $\begin{array}{r} \$20 \\ - 7 \\ \hline \end{array}$

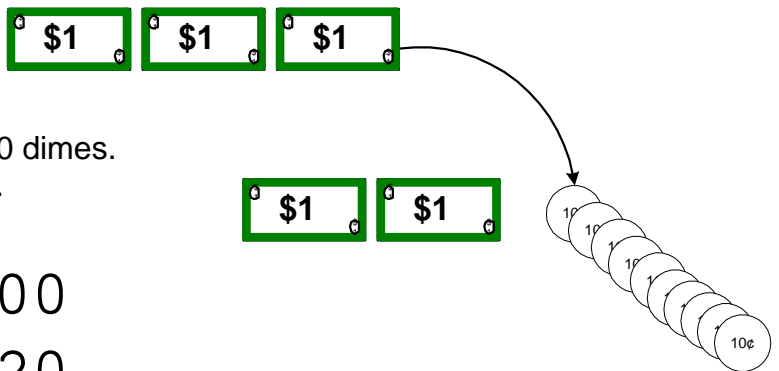
You have \$3.00

Your son needs .20 (2 dimes)

You change \$1 into 10 dimes.

You **borrow** \$1 or **regroup** \$1 into 10 dimes.

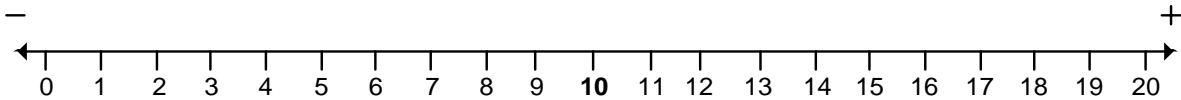
Now you can give your son 2 dimes.



You will write it like this:

$$\begin{array}{r} 2 \\ \cancel{3} .100 \\ - .20 \\ \hline 2 .80 \end{array}$$

(Answers on page 76.)



Borrowing when Subtracting Numbers

In subtraction we also line up the numbers into their place value.

We write **52** **-31** under each other. We always start from the right.



$$\begin{array}{r} 52 \\ - 31 \\ \hline 21 \end{array}$$

Take **1** one from the **2** ones, or $2 - 1$, that leaves **1** one. Then we take **3** tens from the **5** tens, or $5 - 3$, that leaves **2** tens. The answer is **1** one and **2** tens or **21**.

Now start with **52** and take away **23**, or $52 - 23$
Lined up it looks like this:

$$\begin{array}{r} 52 \\ - 23 \\ \hline \end{array}$$

and **oops**, we cannot take **3** ones from **2** ones.

We have to "borrow" **10** ones from the **5** tens, that leaves us **4** tens. We cross out the **5** and write a small **4** on top in the tens place. We take the one ten and write it as a **1** close to the **2** to make it look like **12**. (The ten changed into **10** ones, the same way **1** dime changed into **10** cents when we subtracted money and "borrowed".) Borrowing is also called regrouping.

It will look like this:

$$\begin{array}{r} 4 \\ \cancel{5} 2 \\ - 23 \\ \hline 29 \end{array}$$

Subtract the **3** from the **12** and put the answer **9** in the ones column. Take the **2** tens from the **4** tens and put the answer **2** in the ten column. The answer **29** is **9** ones and **2** tens.

Regrouping

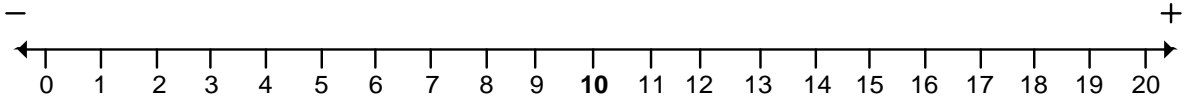
Carrying and borrowing is also called regrouping in arithmetic.

When we regroup **10** smaller values into one value, which is ten times bigger, we call it "carrying." It is the same as changing **10** cents into **1** dime.

When we subtract and we regroup one bigger value into **10** smaller values, we call it "borrowing." It is the same as changing **1** dime into **10** cents.

Some teachers make up stories when they teach borrowing, such as:

If the number at the top is too small, you go to his rich neighbor on the left and borrow 1, that 1 turns into a 10.



Practice Borrowing

You will **not** need to borrow in all the subtractions below. One teacher says:
"When the number on the bottom is bigger than the number on the top, we have to stop, regroup, subtract."

A.
$$\begin{array}{r} 57 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 52 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 41 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 32 \\ - 9 \\ \hline \end{array}$$

B.
$$\begin{array}{r} 70 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 81 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ - 8 \\ \hline \end{array}$$

C.
$$\begin{array}{r} 71 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 71 \\ - 8 \\ \hline \end{array}$$

$$\begin{array}{r} 79 \\ - 8 \\ \hline \end{array}$$

$$\begin{array}{r} 79 \\ - 9 \\ \hline \end{array}$$

D.
$$\begin{array}{r} 72 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 80 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 82 \\ - 3 \\ \hline \end{array}$$

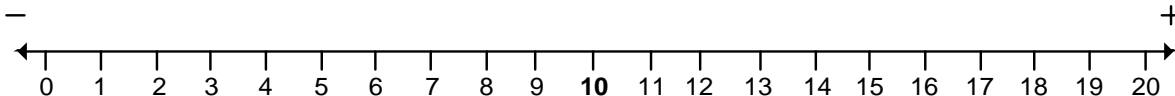
E.
$$\begin{array}{r} \$.21 \\ - .09 \\ \hline \\ \$ \end{array}$$

$$\begin{array}{r} \$.29 \\ - .10 \\ \hline \\ \$ \end{array}$$

$$\begin{array}{r} \$ 75.00 \\ - 72.00 \\ \hline \\ \$ \end{array}$$

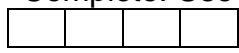
- F. Victoria's team played **20** basket ball games. They lost **5** games, **2** games were tied, how many games did they win?
- G. On a business trip, Bill spent **\$8.78** for lunch and **\$13.85** for dinner. How much more did he spend for dinner than lunch on that day?
- H. Peter has **\$11.50** in his pocket. He wants to buy a CD that costs **\$13.25**. How much more money does Peter need in order to buy the CD?
- I. A book from Borders costs **\$33**. To buy the book, Susan pays the cashier with a **\$50** bill. How much change does Susan receive?
- J. Sammy bought a watermelon and cut it into **10** slices. He and his friends ate **6** slices how many slices were left?

(Answers start on page 76.)



Families with a Four (4)

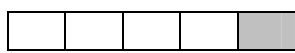
Complete. Use blocks or number line, whichever is easier.



$$4 + 0 = \quad 4 - 0 =$$

$$0 + 4 =$$

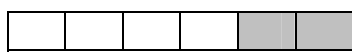
Complete practice below:



$$4 + 1 = \quad 5 - 4 =$$

$$1 + 4 = \quad 5 - 1 =$$

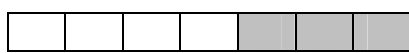
A. $\$55$
 $- 44$



$$4 + 2 = \quad 6 - 4 =$$

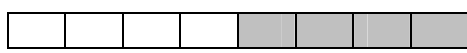
$$2 + 4 = \quad 6 - 2 =$$

B. $\$66$
 $- 62$



$$4 + 3 = \quad 7 - 4 =$$

$$3 + 4 = \quad 7 - 3 =$$



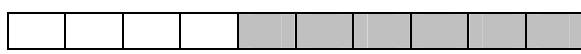
$$4 + 4 = \quad 8 - 4 =$$

C. $\$88$
 $- 48$



$$4 + 5 = \quad 9 - 4 =$$

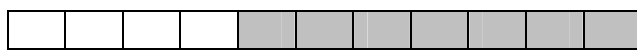
$$5 + 4 = \quad 9 - 5 =$$



$$4 + 6 = \quad 10 - 4 =$$

$$6 + 4 = \quad 10 - 6 =$$

D. $\$.10$ $\$1.00$
 $-.04$ $-.60$



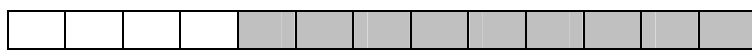
$$4 + 7 = \quad 11 - 4 =$$

$$7 + 4 = \quad 11 - 7 =$$



$$4 + 8 = \quad 12 - 4 =$$

$$8 + 4 = \quad 12 - 8 =$$



$$4 + 9 = \quad 13 - 4 =$$

$$9 + 4 = \quad 13 - 9 =$$

E. $\$1.30$ $\$.90$
 $-.90$ $+.40$

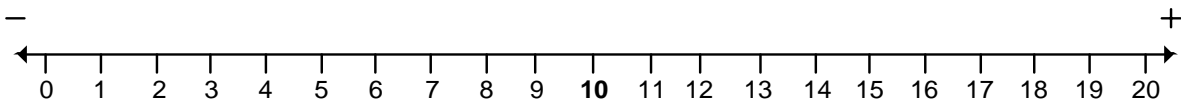


$$4 + 10 = \quad 14 - 4 =$$

$$10 + 4 = \quad 14 - 10 =$$

F. $\$14$ $\$1.40$
 -10 $- 1.00$

(Answers start on page 77.)



Practice with 4s - Watch the + and - signs

A. . $6 + 4 =$ $4 + 9 =$ $7 + 4 =$ $3 + 4 =$
 $8 + 4 =$ $5 + 4 =$ $4 + 4 =$ $3 + 9 =$
 $6 + 3 =$ $3 + 3 =$ $7 + 3 =$ $8 + 3 =$
 $4 + 8 =$ $3 + 4 =$ $4 + 7 =$ $4 + 6 =$

B. $12 - 9 =$ $13 - 4 =$ $11 - 3 =$ $12 - 3 =$
 $11 - 8 =$ $12 - 8 =$ $13 - 9 =$ $9 - 5 =$
 $12 - 4 =$ $10 - 7 =$ $10 - 2 =$ $10 - 4 =$

Practice 2s, 3s, 4s

C. $2 + 1 =$ $4 - 2 =$ $4 + 5 =$ $3 + 9 =$
 $3 + 1 =$ $3 + 7 =$ $3 + 8 =$ $9 - 3 =$
 $7 + 2 =$ $4 + 4 =$ $4 + 7 =$ $6 + 2 =$
 $5 - 2 =$ $4 - 1 =$ $2 + 5 =$ $5 - 4 =$

D. $13 - 9 =$ $4 + 6 =$ $7 + 2 =$ $2 + 9 =$
 $11 - 3 =$ $12 - 9 =$ $11 - 4 =$ $12 - 8 =$
 $13 - 10 =$ $13 - 9 =$ $11 - 2 =$ $13 - 4 =$
 $10 - 2 =$ $10 + 2 =$ $4 + 8 =$ $10 - 3 =$

Includes carrying and borrowing:

E. $\begin{array}{r} 34 \\ + 95 \\ \hline \end{array}$ $\begin{array}{r} 62 \\ - 36 \\ \hline \end{array}$ $\begin{array}{r} 54 \\ + 38 \\ \hline \end{array}$ $\begin{array}{r} \$3.45 \\ + 5.43 \\ \hline \end{array}$

F. $\begin{array}{r} 847 \\ - 324 \\ \hline \end{array}$ $\begin{array}{r} 43 \\ - 6 \\ \hline \end{array}$ $\begin{array}{r} \$.42 \\ - .06 \\ \hline \end{array}$ $\begin{array}{r} \$.41 \\ - .13 \\ \hline \end{array}$

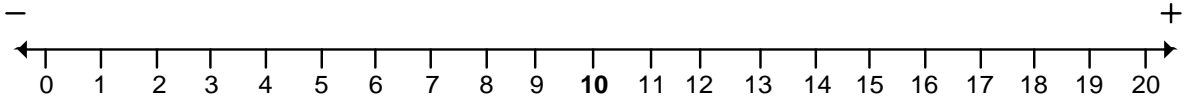
Do you remember how to line up money? Put dollars under dollars, dimes under dimes, cents under cents. Lining up money, or any numbers with decimal points, can be done easily by lining up the decimal points under each other.

We can write one dollar in different ways, as **\$1** or **\$1.** or **\$1.00**. Whole dollars do not always have decimal points to the right. You can pretend that all whole dollars and whole numbers have invisible decimal points to the right. **\$25** is the same as **\$25.**

Example: $\$25 + \$.33$ lined up will look like: $\begin{array}{r} \$25.00 \\ + .33 \\ \hline \$25.33 \end{array}$

- G. Maria was allowed **13** vacation days. She has taken **8** days, how many more vacation days can she use?
- H. Jose is saving for a **\$50** down payment on an easy chair. He has already saved **\$4**. How much more does he need to save to be able to make the down payment?
- I. John and Jerry are saving money to buy a basketball. John has saved **\$4** and Jerry has saved **\$2.60**. How much have they saved altogether?

(Answers start on page 78.)



How To Check Answers When You Subtract

If I say that $5 - 2 = 3$. How can you check that 3 is the correct answer?

Look at the pictures of the blocks below:

$$\begin{array}{cccccc} \square & \square & \square & \square & \square & - & \square & \square & = & \square & \square & \square \\ \text{5} & & & & & - & \text{2} & & = & \text{3} & \text{the answer.} \end{array}$$

$$\begin{array}{cccccc} \square & \square & \square & + & \square & \square & = & \square & \square & \square & \square & \square \\ \text{3} & & & + & \text{2} & & = & \text{5} \end{array}$$

When we add the answer (3) to the number that was subtracted (2) $3 + 2$
We get 5, the number we started with. So 3 is the correct answer to $5 - 2$.

Addition and subtraction are opposites. Each undoes what the other did.

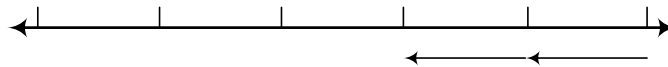
To Check Subtraction: Add the answer to the number you subtracted.

In the example above, add 3 (the answer) to 2 (the number which was subtracted).
You get 5.

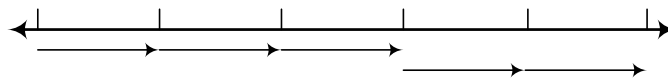
That is correct, because we started subtracting from 5.

This is how it looks on the number line when you check your answers.

You subtract $5 - 2$ on the numberline and get the answer 3



To check, you add 3 (the answer) to 2 (which you subtracted) and you are back on 5.



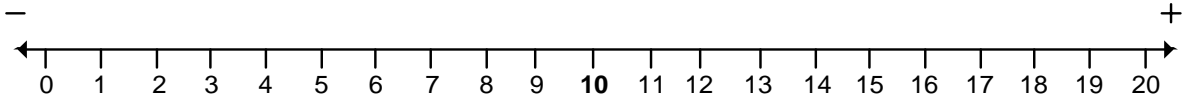
Check by adding your answer to the number you subtracted.
If that sum is the same as the top number, your answer is correct.

When you **subtract vertically**

here is another way to check that the answer to $5 - 2 = 3$

It will look like this

$$\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array} \quad \begin{array}{l} \text{+ add} \\ \text{2} \\ + 3 \\ \hline 5 \end{array} \quad \begin{array}{l} \text{5 is correct.} \\ \text{5 is the number with which we started.} \end{array}$$



Practice in Checking Subtraction

In the following problems check your borrowing by adding your answer to the number you subtracted. When that sum is the same as the number on top, your answer is correct. It will look like this:

You subtracted 3.
Your answer is 4.

$$\begin{array}{r} 7 \\ - 3 \\ \hline 4 \end{array} \quad + \quad \text{Add } 3 + 4$$

The seven is the same as the number on top.
That means your answer, 4, is correct.

Subtract and Check Your Answers

A. $\begin{array}{r} 6 \\ - 4 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ - 4 \\ \hline \end{array}$ $\begin{array}{r} 10 \\ - 4 \\ \hline \end{array}$ $\begin{array}{r} 13 \\ - 3 \\ \hline \end{array}$

B. $\begin{array}{r} 12 \\ - 4 \\ \hline \end{array}$ $\begin{array}{r} 12 \\ - 2 \\ \hline \end{array}$ $\begin{array}{r} 12 \\ - 3 \\ \hline \end{array}$ $\begin{array}{r} 11 \\ - 4 \\ \hline \end{array}$

To check, you add what you subtracted to your answer.

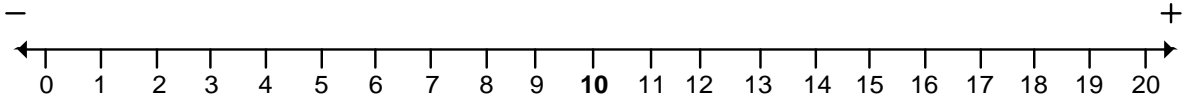
Example: Subtract 5 from 24. To check add the 5 you subtracted to 19, your answer.

$$\begin{array}{r} 1 \\ \cancel{2} \ 14 \\ - \quad 5 \\ \hline 1 \ 9 \end{array} \quad \begin{array}{l} \text{You subtracted 5.} \\ \text{Your answer is 19.} \end{array} \quad \begin{array}{r} 1 \\ + \ 1 \ 9 \\ \hline 2 \ 4 \end{array} \quad \begin{array}{l} \text{You see that when you} \\ \text{added } 5 + 19 \text{ you carried} \\ \text{back the 1 you borrowed.} \end{array}$$

More Practice. Keep checking your answers.

C. $\begin{array}{r} 6 \ 2 \\ - 2 \ 3 \\ \hline \end{array}$ $\begin{array}{r} 6 \ 2 \\ - 3 \ 3 \\ \hline \end{array}$ $\begin{array}{r} 7 \ 3 \\ - 3 \ 4 \\ \hline \end{array}$

(Answers start on page 79.)



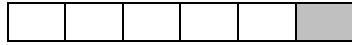
Families with a Five (5) - Please complete

$$5 + 0 =$$

$$0 + 5 =$$

$$5 - 0 =$$

Please complete the following:



$$5 + 1 =$$

$$1 + 5 =$$

$$6 - 5 =$$

$$6 - 1 =$$

A. \$6

$$\underline{- 5}$$

$$\$.60$$

$$\underline{- .10}$$



$$5 + 2 =$$

$$2 + 5 =$$

$$7 - 5 =$$

$$7 - 2 =$$

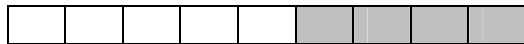


$$5 + 3 =$$

$$3 + 5 =$$

$$8 - 5 =$$

$$8 - 3 =$$



$$5 + 4 =$$

$$4 + 5 =$$

$$9 - 5 =$$

$$9 - 4 =$$

B. \$ 9.00

$$\underline{- 4.00}$$

$$\$.04$$

$$\underline{+ .05}$$



$$5 + 5 =$$

$$10 - 5 =$$

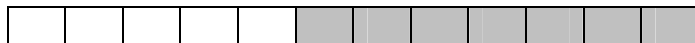


$$5 + 6 =$$

$$6 + 5 =$$

$$11 - 5 =$$

$$11 - 6 =$$

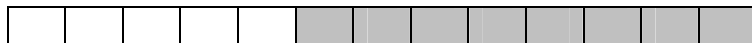


$$5 + 7 =$$

$$7 + 5 =$$

$$12 - 5 =$$

$$12 - 7 =$$



$$5 + 8 =$$

$$8 + 5 =$$

$$13 - 5 =$$

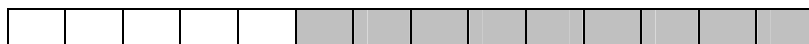
$$13 - 8 =$$

C. \$13

$$\underline{- 8}$$

$$\$.13$$

$$\underline{- .05}$$



$$5 + 9 =$$

$$9 + 5 =$$

$$14 - 5 =$$

$$14 - 9 =$$



$$5 + 10 =$$

$$10 + 5 =$$

$$15 - 5 =$$

$$15 - 10 =$$

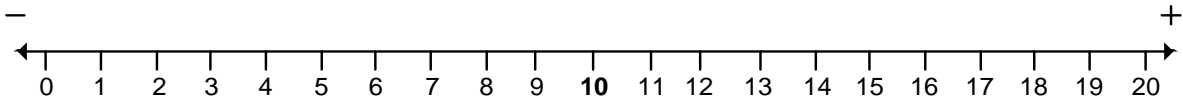
D. \$15

$$\underline{- \$10}$$

$$\$15$$

$$\underline{- \$5}$$

(Answers on page 80.)



Practice with 5s

- A.
- | | | | |
|------------|------------|------------|------------|
| $5 + 7 =$ | $8 + 5 =$ | $6 + 5 =$ | $9 - 4 =$ |
| $9 - 2 =$ | $5 + 4 =$ | $11 - 6 =$ | $13 - 8 =$ |
| $11 - 5 =$ | $3 + 5 =$ | $5 + 2 =$ | $13 - 5 =$ |
| $5 + 9 =$ | $12 - 5 =$ | $8 - 5 =$ | $7 - 5 =$ |
- B.
- | | | | |
|------------|-------------|------------|------------|
| $10 - 5 =$ | $5 + 6 =$ | $5 + 8 =$ | $5 + 5 =$ |
| $12 - 7 =$ | $5 + 3 =$ | $9 + 5 =$ | $4 + 5 =$ |
| $14 - 9 =$ | $2 + 5 =$ | $14 - 5 =$ | $9 - 5 =$ |
| $14 - 5 =$ | $19 - 15 =$ | $8 - 3 =$ | $15 - 5 =$ |

Practice Adding and Subtracting Many Numbers

Try doing these in your head. Say them aloud. Do it on the numberline if that helps you.

- C.
- | |
|-------------------------------|
| $5 + 5 - 1 - 5 + 3 + 9 - 2 =$ |
| $5 + 3 + 4 - 3 - 4 + 6 - 1 =$ |
| $6 + 5 - 2 - 1 - 3 + 5 =$ |

More About Word Problems

- D. When you add is the answer larger or smaller?
 E. When you subtract is the answer larger or smaller?

It is funny, but sometimes with word problems we don't know whether to add or subtract. In real life, we don't usually have that problem.

When we **add** we put things together. We will end up with **more** than we started with.
 Example: You have \$4, I give you \$3, you will have $\$4 + \$3 = \$7$, more than with what you started.

When we **subtract**, we take something away. We take the smaller away from the bigger. We will end up with **less** than we started with.

Example: You have \$8 and spend \$3. We take 3 from 8. We say 8 subtract 3 or 8 minus 3. Now you have $\$8 - \$3 = \$5$, that is less than when you started.

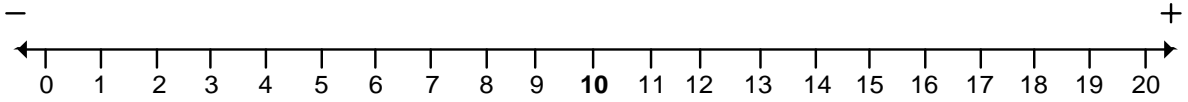
The **answer** when you **add** is called the **sum**. The sum of $4 + 3$ is 7.

The **answer** when you **subtract** is called the **difference**. The difference between 5 and 8, or $8 - 5$ is 3.

Practice

- F. What is the difference in what you earn per hour if you get \$12 per hour instead of \$10 per hour?
 G. Joe is 11 years old. He got \$2 for the first job and \$4 each for the last two jobs. How much did he get altogether?

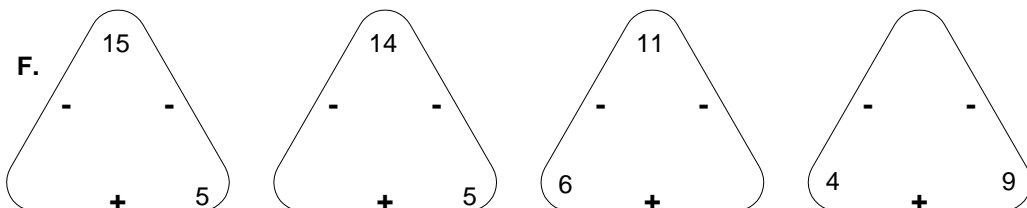
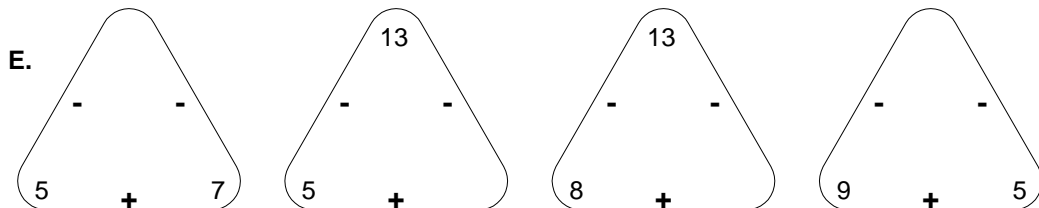
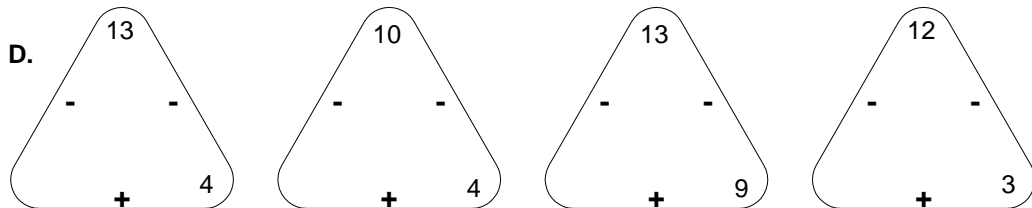
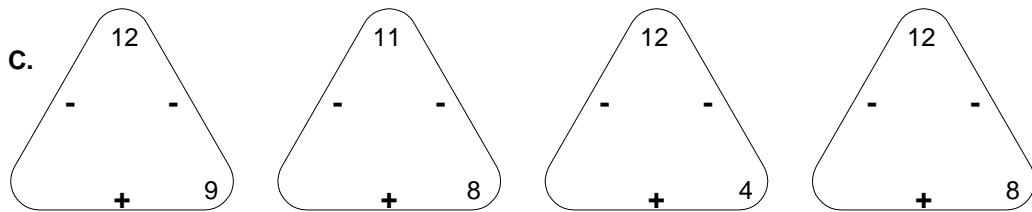
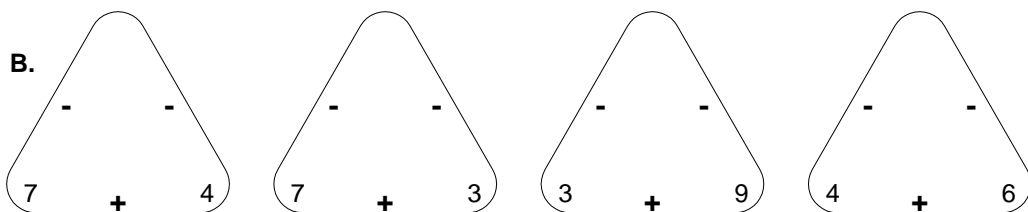
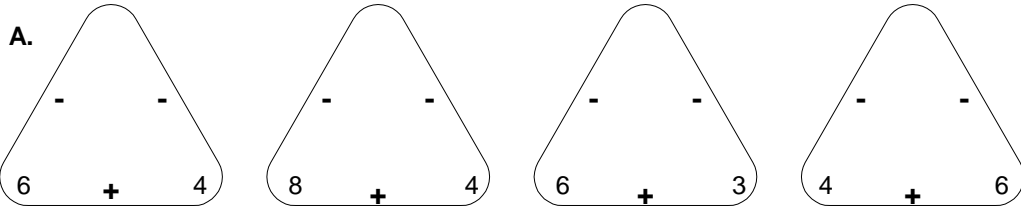
(Answers on page 81.)



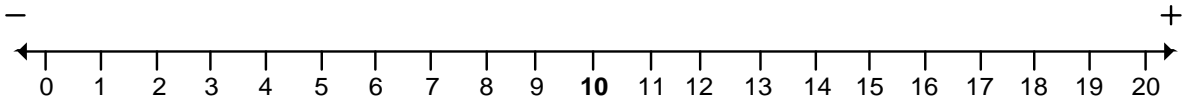
Practice with 3s, 4s and 5s

Please fill in the empty corners.

After you fill in the empty corners, read the family members out loud and write them down next to the triangle. (See page 17 bottom if you forgot how to use the triangles.)



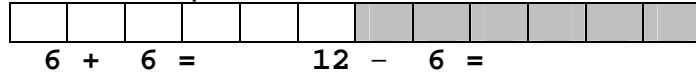
(Answers on page 81.)



Families with a Six (6).

Is it true that you already know $6 + 1$, $6 + 2$, $6 + 3$, $6 + 4$, and $6 + 5$? Keep saying the "family members" out loud in the additions and subtractions below, even if you do it very softly.

Please complete:



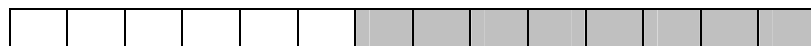
$$6 + 6 = \quad 12 - 6 =$$



$$6 + 7 = \quad 13 - 6 =$$

$$7 + 6 = \quad 13 - 7 =$$

$$\text{A. } \begin{array}{r} \$13.00 \\ - \quad .07 \\ \hline \end{array}$$



$$6 + 8 = \quad 14 - 6 =$$

$$8 + 6 = \quad 14 - 8 =$$

$$\text{B. } \begin{array}{r} \$1.40 \\ - \quad .80 \\ \hline \end{array} \quad \begin{array}{r} \$.80 \\ - \quad .60 \\ \hline \end{array}$$



$$6 + 9 = \quad 15 - 6 =$$

$$9 + 6 = \quad 15 - 9 =$$

$$\text{C. } \begin{array}{r} \$600 \\ + \quad 900 \\ \hline \end{array} \quad \begin{array}{r} \$1500 \\ - \quad 600 \\ \hline \end{array}$$



$$6 + 10 = \quad 16 - 6 =$$

$$10 + 6 = \quad 16 - 10 =$$

$$\text{D. } \begin{array}{r} \$1.60 \\ - \quad 1.00 \\ \hline \end{array} \quad \begin{array}{r} \$1.60 \\ - \quad .60 \\ \hline \end{array}$$

Practice with Sixes

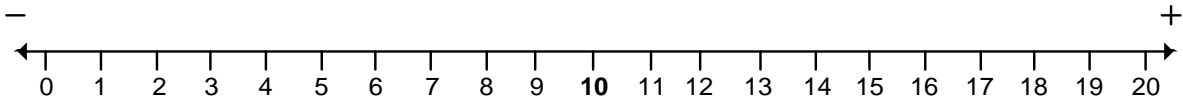
E.	$6 + 7 =$	$3 + 6 =$	$5 + 6 =$	$10 - 6 =$
	$15 - 6 =$	$14 - 6 =$	$6 + 6 =$	$9 - 3 =$
	$8 - 6 =$	$7 + 6 =$	$11 - 6 =$	$6 + 4 =$

F.	$6 + 8 =$	$6 + 2 =$	$14 - 8 =$	$4 + 6 =$
	$13 - 6 =$	$2 + 6 =$	$6 + 9 =$	$11 - 5 =$
	$15 - 9 =$	$6 + 3 =$	$10 - 4 =$	$9 + 6 =$

Word Problems

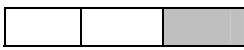
- G. Joe was paid $\$6.75$ per hour, Mary was getting $\$7.25$ and Carlos was getting $\$8.90$. They each got a raise of $\$.60$ per hour. How much is each being paid now?
- H. A teenager spent one hour on homework last Monday. He usually puts in **20** minutes, how much longer did he spend on homework on Monday?
- I. Johnny got **15** candies on Halloween. He gave **9** away. How many did he have left?
- J. Last week Lupe worked in a restaurant **8** hours on Tuesday and **6** hours on Saturday. How many hours did she work there last week?
- K. On a two-day camping trip, we hiked seven miles on the first day and six miles on the second day. How many miles did we hike our trip?
- L. I borrowed $\$13$ from Pavel and paid back $\$7$. How much do I still owe?

(Answers start on page 81.)

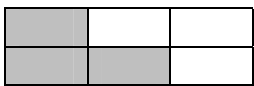


What Makes 3?

Please complete all equations. It will help if you keep saying them out loud.

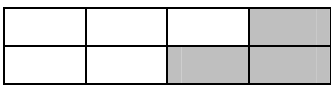
A. $2 + 1 =$  $1 + 2 =$

1 2 3

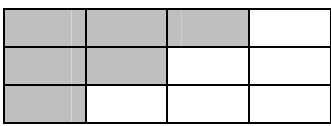
B. $3 - 1 =$  $1 + 2 =$
 $3 - 2 =$ $2 + 1 =$

1 2 3

What Makes 4?

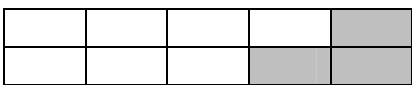
C. $3 + 1 =$  $4 - 1 =$
 $2 + 2 =$ $4 - 2 =$

1 2 3 4

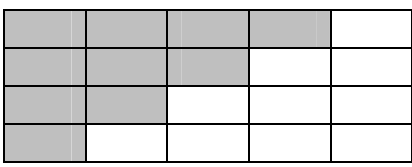
D. $4 - 1 =$  $3 + 1 =$
 $4 - 2 =$ $2 + 2 =$
 $4 - 3 =$ $1 + 3 =$

1 2 3 4

What Makes 5?

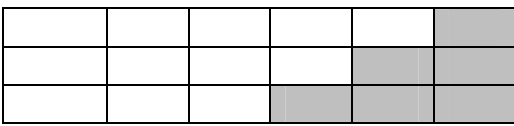
E. $4 + 1 =$  $5 - 1 =$
 $3 + 2 =$ $5 - 2 =$

1 2 3 4 5

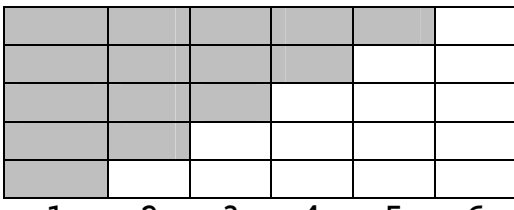
F. $5 - 4 =$  $4 + 1 =$
 $5 - 3 =$ $3 + 2 =$
 $5 - 2 =$ $2 + 3 =$
 $5 - 1 =$ $1 + 4 =$

1 2 3 4 5

What Makes 6?

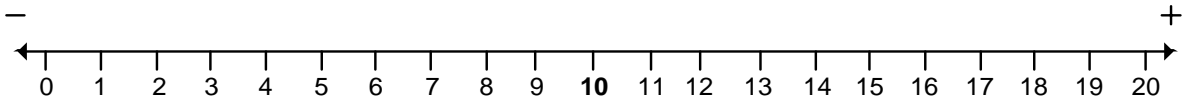
G. $5 + 1 =$  $6 - 1 =$
 $4 + 2 =$ $6 - 2 =$
 $3 + 3 =$ $6 - 3 =$

1 2 3 4 5 6

H. $6 - 1 =$  $5 + 1 =$
 $6 - 2 =$ $4 + 2 =$
 $6 - 3 =$ $3 + 3 =$
 $6 - 4 =$ $2 + 4 =$
 $6 - 5 =$ $1 + 5 =$

1 2 3 4 5 6

(Answers on page 83.)



Practice 4s, 5s, 6s

- A. $6 + 4 =$ $5 + 3 =$ $7 - 2 =$ $5 + 8 =$
 $13 - 9 =$ $2 + 4 =$ $10 - 6 =$ $11 - 7 =$
 $8 - 2 =$ $6 + 7 =$ $8 - 3 =$ $13 - 5 =$
 $13 - 8 =$ $9 - 3 =$ $4 + 9 =$ $5 + 2 =$
- B. $12 - 4 =$ $5 + 7 =$ $6 + 2 =$ $12 - 6 =$
 $4 + 1 =$ $6 + 5 =$ $4 + 5 =$ $6 + 8 =$
 $7 + 5 =$ $2 + 6 =$ $9 - 5 =$ $13 - 4 =$
 $5 + 9 =$ $13 - 6 =$ $5 + 5 =$ $9 - 6 =$
- C. $5 + 6 =$ $1 + 4 =$ $12 - 7 =$ $8 - 6 =$
 $7 - 4 =$ $6 + 3 =$ $10 - 4 =$ $11 - 5 =$
 $3 + 6 =$ $13 - 7 =$ $11 - 6 =$ $4 + 4 =$
 $14 - 5 =$ $7 - 5 =$ $14 - 6 =$ $15 - 6 =$
- D. $12 - 8 =$ $4 + 8 =$ $8 + 5 =$ $2 + 5 =$
 $8 - 5 =$ $5 - 1 =$ $9 - 4 =$ $6 - 2 =$
 $4 + 6 =$ $4 + 3 =$ $4 + 7 =$ $6 + 9 =$
 $3 + 5 =$ $5 + 4 =$ $12 - 5 =$ $8 + 6 =$
- E. $7 - 3 =$ $9 + 6 =$ $6 + 6 =$ $7 + 4 =$
 $10 - 5 =$ $9 + 5 =$ $5 - 4 =$ $6 - 4 =$
 $11 - 4 =$ $4 + 2 =$ $14 - 9 =$ $8 - 4 =$
 $7 + 6 =$ $15 - 9 =$ $8 + 4 =$ $3 + 4 =$

Practice with More Than Two Numbers

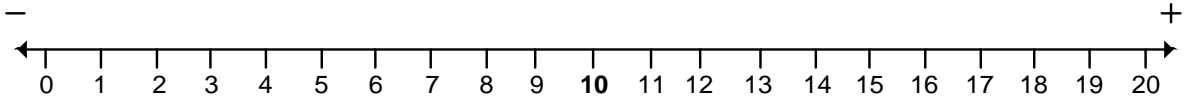
Try doing these in your head. Say each one aloud.
 If you get stuck, try it on the number line.

F. $4 + 5 + 1 - 5 + 6 - 10 + 4 =$
 $6 + 3 + 2 - 1 - 5 + 3 + 2 =$

Word Problems

- G. I paid \$7 for vegetables and \$6 for fruit. How much did I pay in all?
- H. There were 12 persons living in our apartment building. Five moved out, how many persons are left in the building?
- I. Joe had 14 math problems to do. He finished 6 at school. How many did he still have to do when he came home?

(Answers start on page 83.)



Practice with 6s and 7s

Fill in empty corners. After you fill them in read the family members out loud and write them down next to the triangle. If you forgot how, see page 17.

A.

$\begin{array}{c} 11 \\ - \quad - \\ 5 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 8 \quad + \quad 6 \end{array}$	$\begin{array}{c} 16 \\ - \quad - \\ \quad + \quad 9 \end{array}$	$\begin{array}{c} 14 \\ - \quad - \\ 7 \quad + \end{array}$
---	--	---	---

B.

$\begin{array}{c} 13 \\ - \quad - \\ 6 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 6 \quad + \quad 9 \end{array}$	$\begin{array}{c} 15 \\ - \quad - \\ 7 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 7 \quad + \quad 5 \end{array}$
---	--	---	--

C.

$\begin{array}{c} \\ - \quad - \\ 7 \quad + \quad 8 \end{array}$	$\begin{array}{c} 12 \\ - \quad - \\ \quad + \quad 7 \end{array}$	$\begin{array}{c} 14 \\ - \quad - \\ 6 \quad + \end{array}$	$\begin{array}{c} 12 \\ - \quad - \\ \quad + \quad 6 \end{array}$
--	---	---	---

D.

$\begin{array}{c} 16 \\ - \quad - \\ 7 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 5 \quad + \quad 6 \end{array}$	$\begin{array}{c} 15 \\ - \quad - \\ 8 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 6 \quad + \quad 7 \end{array}$
---	--	---	--

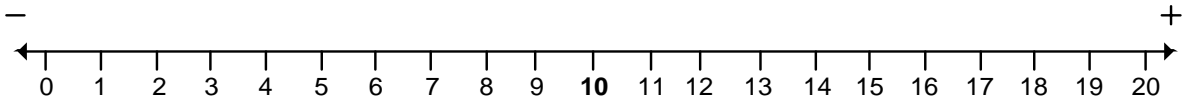
E.

$\begin{array}{c} 11 \\ - \quad - \\ 6 \quad + \end{array}$	$\begin{array}{c} 14 \\ - \quad - \\ 7 \quad + \end{array}$	$\begin{array}{c} 15 \\ - \quad - \\ 6 \quad + \end{array}$	$\begin{array}{c} \\ - \quad - \\ 7 \quad + \quad 9 \end{array}$
---	---	---	--

F.

$\begin{array}{c} 14 \\ - \quad - \\ 8 \quad + \end{array}$	$\begin{array}{c} 13 \\ - \quad - \\ \quad + \quad 7 \end{array}$	$\begin{array}{c} 15 \\ - \quad - \\ \quad + \quad 9 \end{array}$	$\begin{array}{c} 12 \\ - \quad - \\ 5 \quad + \end{array}$
---	---	---	---

(Answers on page 85.)



Families with a Nine (9)

Except for the family $9+9$, you should know all of the following. Do you?

In problems with big numbers, it is easier to put the digits under each other.

--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 0 = \\ 0 + 9 = \end{array} \qquad \begin{array}{r} 9 - 0 = \\ 9 - 9 = \end{array}$$

A.	\$ 9	\$.09
	<u>- 9</u>	<u>- .00</u>

--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 1 = \\ 1 + 9 = \end{array} \qquad \begin{array}{r} 10 - 9 = \\ 10 - 1 = \end{array}$$

B.	9 cents	1 dime	or	\$.10
	<u>+ 1 cent</u>	<u>- 1 cent</u>		<u>- .01</u>

--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 2 = \\ 2 + 9 = \end{array} \qquad \begin{array}{r} 11 - 9 = \\ 11 - 2 = \end{array}$$

--	--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 3 = \\ 3 + 9 = \end{array} \qquad \begin{array}{r} 12 - 3 = \\ 12 - 9 = \end{array}$$

C.	\$12	\$12,000
	<u>- 9</u>	<u>- 3,000</u>

--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 4 = \\ 4 + 9 = \end{array} \qquad \begin{array}{r} 13 - 9 = \\ 13 - 4 = \end{array}$$

D.	\$1.30	\$1300
	<u>- .40</u>	<u>- 900</u>

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 5 = \\ 5 + 9 = \end{array} \qquad \begin{array}{r} 14 - 9 = \\ 14 - 5 = \end{array}$$

E.	\$14.14	\$5.09
	<u>- 9.05</u>	<u>+ 9.05</u>

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 6 = \\ 6 + 9 = \end{array} \qquad \begin{array}{r} 15 - 9 = \\ 15 - 6 = \end{array}$$

F.	\$906	\$916
	<u>+ 609</u>	<u>+ 609</u>

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 7 = \\ 7 + 9 = \end{array} \qquad \begin{array}{r} 16 - 9 = \\ 16 - 7 = \end{array}$$

G.	\$161,609
	<u>- 90,708</u>

Can you make up some money practices with the "family members" below?

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 8 = \\ 8 + 9 = \end{array} \qquad \begin{array}{r} 17 - 9 = \\ 17 - 8 = \end{array}$$

Example:	\$1.70
	<u>- .80</u>

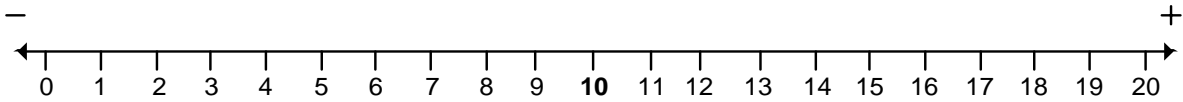
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$9 + 9 = \qquad 18 - 9 =$$

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

$$\begin{array}{r} 9 + 10 = \\ 10 + 9 = \end{array} \qquad \begin{array}{r} 19 - 9 = \\ 19 - 10 = \end{array}$$

(Answers on page 86.)



9's are Helpers

9s are great numbers. They can help you do arithmetic faster.

Here is how 9 can help with **adding**:

You know that $10 + 5 = 15$

9 is one less than 10.

Then $9 + 5 =$ must be one less than 15,

$9 + 5 = 14$, one less than 15

A. Since $10 + 4 = 14$, you can figure out the answer to $9 + 4$.

$9 + 4 = ?$ (one less than 14)

How much is $9 + 7 = ?$ (one less than ?)

Here is how 9 can help with **subtracting**

You know that $17 - 10 = 7$

9 is one less than 10, take one less away and have one more left.

$17 - 9 = 8$ one more than the answer to $17 - 10$, which is 7.

B. Since $14 - 10 = 4$, you can figure out the answer to $14 - 9$?

$14 - 9 = ?$ (one more than 4.)

How much is $12 - 9 =$ (one more than ?)

Practice adding and subtracting with 9s. Watch the + and - signs.

C. $10 + 3 =$	$16 - 10 =$	$9 + 4 =$	$9 + 2 =$
$9 + 3 =$	$16 - 9 =$	$6 + 9 =$	$10 + 2 =$
$9 + 6 =$	$13 - 9 =$	$11 - 9 =$	$9 + 6 =$
$8 + 9 =$	$17 - 9 =$	$11 - 10 =$	$10 + 6 =$

Word Problems

D. Steve has 9 jelly beans. He puts the nine jelly beans in a jar with 27 jelly beans.

How many jelly beans are there now in the jar?

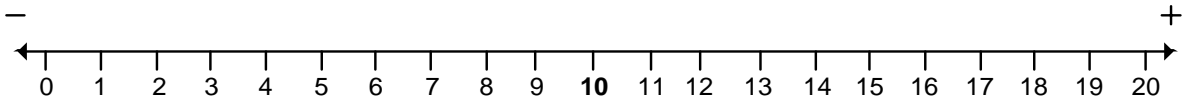
E. Jimmy goes to the Deli to buy some meatloaf. The meatloaf costs \$17. Jimmy has

only 9 bucks. How much more money does Jimmy need to pay for the meatloaf?

F. At the end of a pie sale, there were 3 pieces of apple pie, 3 pieces of lemon pie and

9 pieces of chocolate pie left. How many pieces of pie were left altogether?

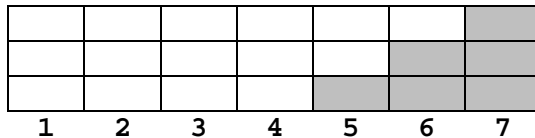
(Answers on page 87.)



What Makes 7?

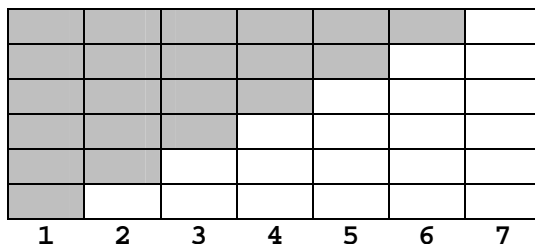
Keep saying them out loud.

- A. $6 + 1 =$
 $5 + 2 =$
 $4 + 3 =$



- $7 - 1 =$
 $7 - 2 =$
 $7 - 3 =$

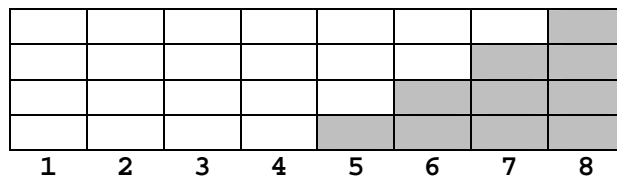
- B. $7 - 1 =$
 $7 - 2 =$
 $7 - 3 =$
 $7 - 4 =$
 $7 - 5 =$
 $7 - 6 =$



- $6 + 1 =$
 $5 + 2 =$
 $4 + 3 =$
 $3 + 4 =$
 $2 + 5 =$
 $1 + 6 =$

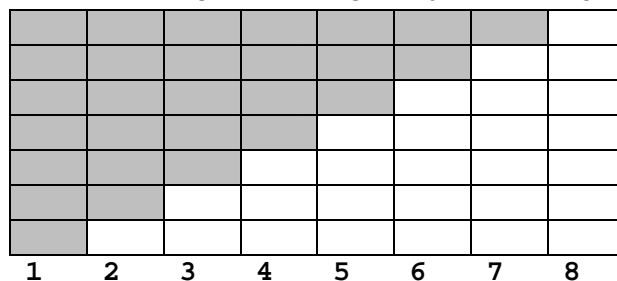
What Makes 8?

- C. $7 + 1 =$
 $6 + 2 =$
 $5 + 3 =$
 $4 + 4 =$



- $8 - 1 =$
 $8 - 2 =$
 $8 - 3 =$
 $8 - 4 =$

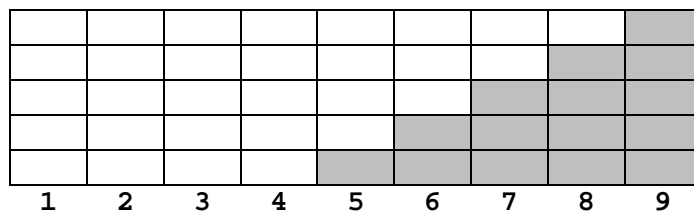
- D. $8 - 1 =$
 $8 - 2 =$
 $8 - 3 =$
 $8 - 4 =$
 $8 - 5 =$
 $8 - 6 =$
 $8 - 7 =$



- $7 + 1 =$
 $6 + 2 =$
 $5 + 3 =$
 $4 + 4 =$
 $3 + 5 =$
 $2 + 6 =$
 $1 + 7 =$

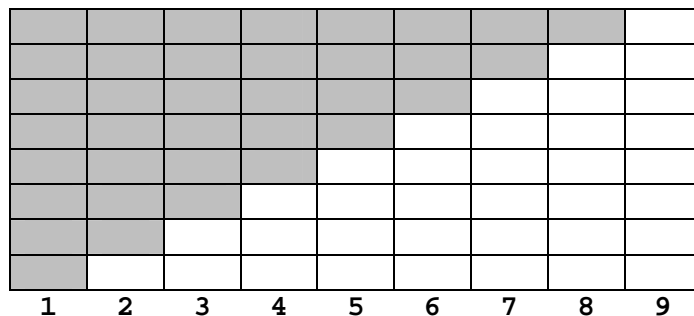
What Makes 9?

- E. $8 + 1 =$
 $7 + 2 =$
 $6 + 3 =$
 $5 + 4 =$
 $4 + 5 =$



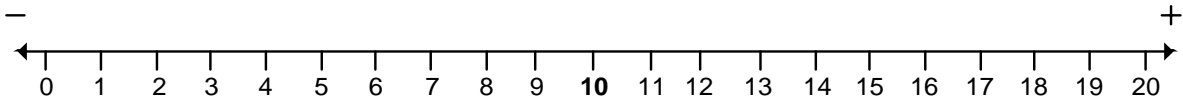
- $9 - 1 =$
 $9 - 2 =$
 $9 - 3 =$
 $9 - 4 =$
 $9 - 5 =$

- F. $9 - 1 =$
 $9 - 2 =$
 $9 - 3 =$
 $9 - 4 =$
 $9 - 5 =$
 $9 - 6 =$
 $9 - 7 =$
 $9 - 8 =$



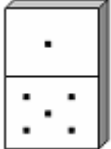
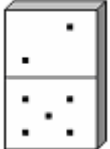


- $8 + 1 =$
 $7 + 2 =$
 $6 + 3 =$
 $5 + 4 =$
 $4 + 5 =$
 $3 + 6 =$
 $2 + 7 =$
 $1 + 8 =$

(Answers start on page 87.)


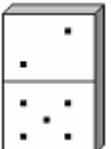

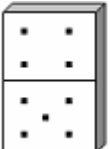


Dominoes

Dominoes can help you add. It is easy to add the dots together.

	1		2		3		4
$+ 5$		$+ 5$		$+ 5$		$+ 5$	
$\hline 6$		$\hline 7$		$\hline 8$		$\hline 9$	
<div style="border: 1px solid black; padding: 2px; display: inline-block;">6</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">7</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">8</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">9</div>	

You can add the dots at the top together. Then add the fives at the bottom, the two fives together make ten. Below you see that dominoes with 6 and 7 dots add up to 3 + 10, or 13 dots altogether. Altogether the dominoes with 6 and 9 dots have 15 dots.

		3			5
$+ 5$		$+ 10$	$+ 5$		$+ 10$
$\hline 6$		$\hline 13$	$\hline 6$		$\hline 15$
6 +	7 =	13	6 +	9 =	15

When you add dominoes you can add the top dots and the bottom dots to get the answer. Fill in the answers below.

A.

		+ <u> </u>			+ <u> </u>
8 +	7 =		7 +	9 =	

Complete the following families:

B. 6 + 6 =	6 + 7 =	6 + 8 =	6 + 9 =
12 - =	+ =	+ =	+ =
7 + 7 =	13 - 6 =	- =	- =
14 - 7 =	13 - 7 =	- =	- =

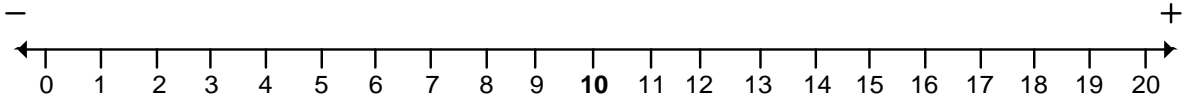
C. 7 + 8 =	7 + 9 =	8 + 8 =	8 + 9 =
+ =	+ =	- =	+ =
- =	- =	9 + 9 =	- =
- =	- =	- =	- =

Practice

Look carefully, does it have a plus (+) or a minus (-)?

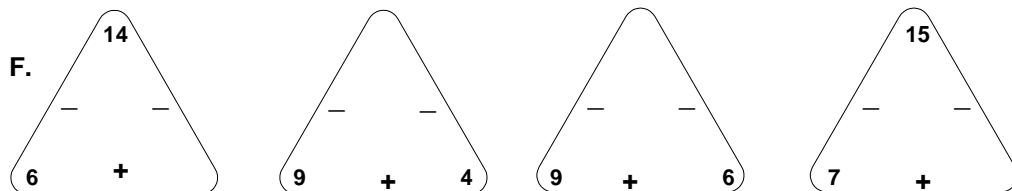
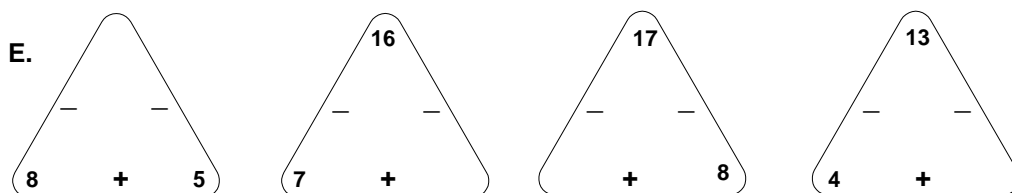
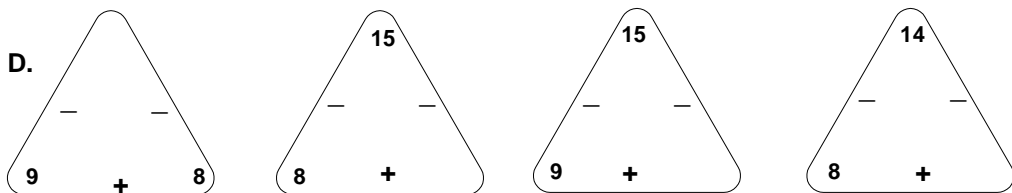
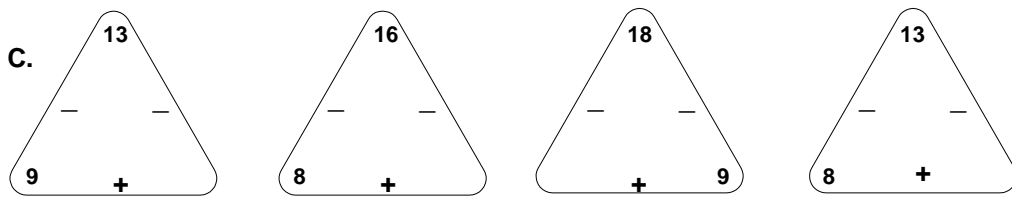
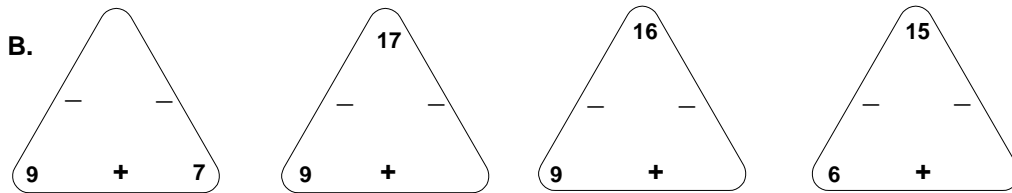
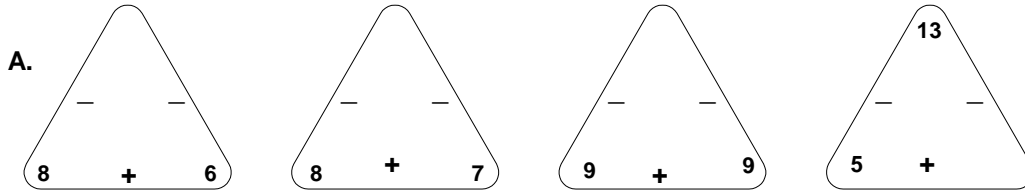
D. 9 - 5 =	13 - 7 =	17 - 7 =	6 + 7 =
16 - 7 =	16 - 9 =	15 - 7 =	17 - 9 =
17 - 8 =	16 - 10 =	8 + 7 =	17 - 6 =
15 - 8 =	16 - 8 =	15 - 6 =	

(Answers on page 88.)

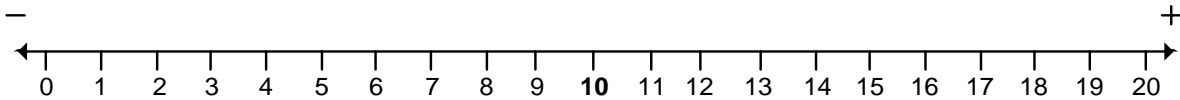


Practice with 7s, 8s and 9s

Fill in empty corners. After you fill them in, read the family members out loud and write them down next to the triangle. See page 17 in case you forgot how to do it.



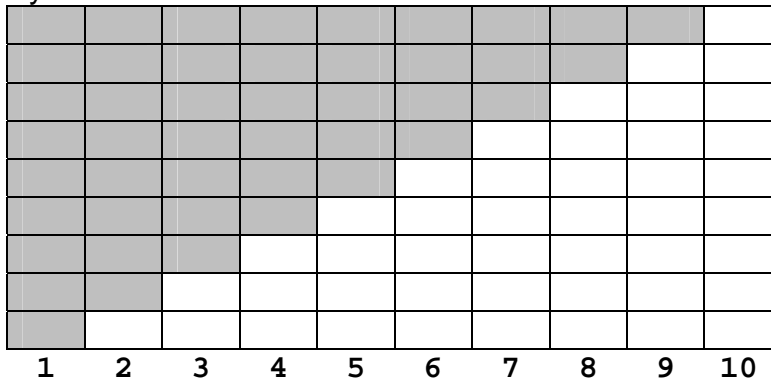
(Answers on page 88.)



What Makes 10?

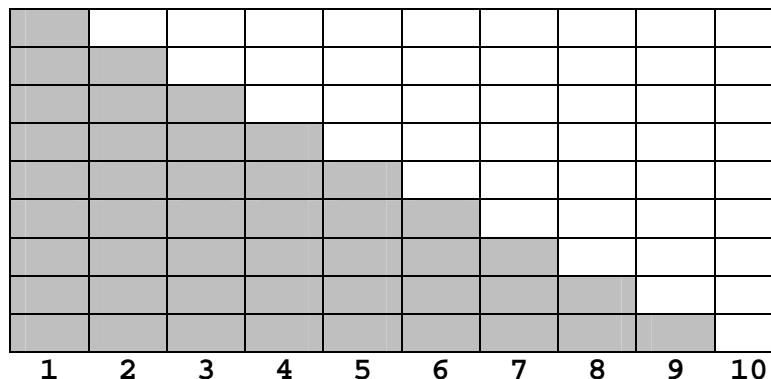
Please complete and say the numbers out loud.

- A.** $10 - 1 =$
 $10 - 2 =$
 $10 - 3 =$
 $10 - 4 =$
 $10 - 5 =$
 $10 - 6 =$
 $10 - 7 =$
 $10 - 8 =$
 $10 - 9 =$



- $9 + 1 =$
 $8 + 2 =$
 $7 + 3 =$
 $6 + 4 =$
 $5 + 5 =$
 $4 + 6 =$
 $3 + 7 =$
 $2 + 8 =$
 $1 + 9 =$

- B.** $9 + 1 =$
 $8 + 2 =$
 $7 + 3 =$
 $6 + 4 =$
 $5 + 5 =$
 $4 + 6 =$
 $3 + 7 =$
 $2 + 8 =$
 $1 + 9 =$



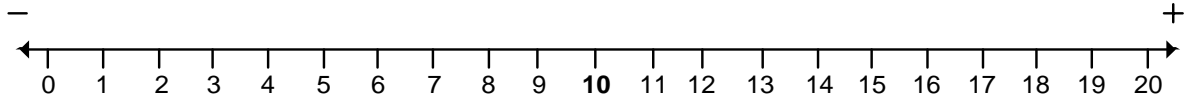
- $10 - 1 =$
 $10 - 2 =$
 $10 - 3 =$
 $10 - 4 =$
 $10 - 5 =$
 $10 - 6 =$
 $10 - 7 =$
 $10 - 8 =$
 $10 - 9 =$

It will help you add and subtract more quickly when you know which numbers together make 10. It will make a big difference as you go on with math.

Practice

- C.** $4 + 6 =$ $10 - 3 =$ $8 + 2 =$ $10 - 4 =$
 $10 - 2 =$ $10 - 6 =$ $10 - 7 =$ $8 + 2 =$
 $10 - 5 =$ $10 - 8 =$ $7 + 3 =$ $10 - 1 =$
 $10 - 7 =$ $10 - 9 =$ $5 + 5 =$

- D.** A class for vocational nurses has openings for ten students. Seven have been accepted. How many more can be accepted?
E. John had 6 baseball cards. He got 4 more. Then how many did he have?
F. Mary has a job which will take 10 hours. She has worked one hour. How many more hours will she have to work?
G. I need \$10 for a lesson but have \$8 only. How much more do I need?
H. Mary earned \$9 on Monday and \$10 on Tuesday. What did she earn in total for those two days?
I. In her next job Mary earned \$ 17 on one day but she had to pay \$ 10 for a special bus back and forth to work. How much money did she end up with that day?



Carrying when Adding Money with 3 or More Digits

When we add $\$23.41 + \15.79 we first line up the decimal points.



$$\begin{array}{r} \\ \\ 1 \\ 1 \\ \hline \$ 23.41 \\ + 15.79 \\ \hline \$ 39.20 \end{array}$$

Start on the right adding the cents

$1 + 9 = 10\text{c}$, put down **0** in the cents column, carry **1** to top of dimes column.

$1 + 4 + 7 = 12$ dimes, put **2** in the dimes column, carry **1** to top of the \$1 dollar column.

$\$1 + \$3 + \$5 = \9 put **9** in the \$1 column.

Then: $\$20 + \$10 = \$30$. The **3** goes into the \$10 column.

Every time you get **10** dimes you have to carry a dollar.

Example

$$\begin{array}{r} \$ 2.80 \\ .70 \\ + .60 \\ \hline \$ 2.10 \end{array}$$

When you get **20** dimes you will have

to carry that as a **2** into the **\$1** dollar column.

How much you will you spend altogether when you buy **3** different items at a store?

The items cost $\$27.39$, $\$38.46$ and $\$19.57$. Line them up in any order.

$$\begin{array}{r} \\ \\ 2 \\ 1 \\ 2 \\ \hline \$ 27.39 \\ \\ 18.46 \\ + 19.57 \\ \hline \$ 65.42 \end{array}$$

Start on the right adding the cents

$9 + 6 + 7 = 22$ cents. Put **2** in the cents answer place, and put the 2nd **2** on top of the dimes column.

$2 + 3 + 4 + 5 = 14$ dimes. Put **4** into the dimes answer, and carry **10** dimes as **\$1** to the top of the dollars column.

$1 + 7 + 8 + 9 = 25$. Put **\$5** in the answer, and carry **\$20** to the top of the **\$10** column.

Notice that you carried three times in the addition above?

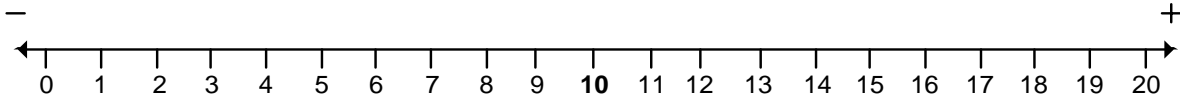
Did you also notice that you carried two tens, not just one ten, in a couple of places?

Practice How many dimes and or dollars do you carry in the following sums?

A.	$\$.35$	$\$.47$	$\$ 3.75$
	$.45$	$.33$	$\$ 2.35$
	<u>$.25$</u>	<u>$.38$</u>	<u>$\\$ 8.91$</u>

B.	$\$ 34.78$	$\$ 40.93$	$\$ 53.24$
	<u>9.35</u>	<u>60.07</u>	<u>28.33</u>

(Answers start on page 89.)



More on Carrying with Big Numbers



Please look back to page 2. It shows how we count (group) by **10s**.

When we add ones and make a group of **10**, the **1** moves one place to the **left**.
 We put the **1** in the **10** column, the next column on the left, with a higher value.
 We carry the **1** ten to the top of the **10** column.

$$\begin{array}{r} 1 \\ 8 \\ + 2 \\ \hline 10 \end{array}$$

When we add tens and get a group of **10** tens, we move the **1** to the left.
 We put that **1** in the **100** column, the column with a higher value than **10**.
 We carry the **1** of the **10** tens to the top of the **100** column.

$$\begin{array}{r} 1 \\ 80 \\ + 20 \\ \hline 100 \end{array}$$

Here we add **2** hundreds and **8** hundreds. It gives us **10** hundreds.
 We carry the **1** of the **10** hundreds into the **1000** column.

$$\begin{array}{r} 1 \\ 800 \\ + 200 \\ \hline 1000 \end{array}$$

Examples

$$\begin{array}{r} 1 \\ 1 \\ + 9 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 1 \\ 10 \\ + 90 \\ \hline 100 \end{array}$$

$$\begin{array}{r} 1 \\ 2 \\ + 9 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 1 \\ 20 \\ + 90 \\ \hline 110 \end{array}$$

$$\begin{array}{r} 1 \\ 300 \\ + 800 \\ \hline 1100 \end{array}$$

Another example of adding with three digit numbers:

$$\begin{array}{r} 11 \\ 746 \\ + 266 \\ \hline 1012 \end{array}$$

Add ones: $6 + 6 = 12$. The **2** goes into the **1s** place. The **1** ten goes to the top of the **10** column.
 Add the tens: $1 + 4 + 6 = 11$ tens. The **1** ten goes into the **10s** place. The **10** tens go to the top as a **1** in the **100** column.
 Now add the hundreds: $1 + 7 + 2 = 10$ hundreds. The **0** goes into the hundreds place. The **10** hundreds turn into **1** thousand and go on top.

Practice

Start on the right.



A.
$$\begin{array}{r} 345 \\ + 255 \\ \hline \end{array}$$

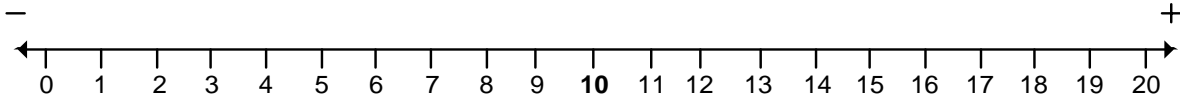
$$\begin{array}{r} 893 \\ + 215 \\ \hline \end{array}$$

$$\begin{array}{r} 825 \\ + 35 \\ \hline \end{array}$$

B.
$$\begin{array}{r} 7,004 \\ + 4,578 \\ \hline \end{array}$$

$$\begin{array}{r} 9,135 \\ + 23,176 \\ \hline \end{array}$$

(Answers on page 90.)



Borrowing When Subtracting with Big Money Numbers

To subtract: **\$4.00 - \$0.05** you line up the **\$ 4.00** and the **\$0.05** see below:

You cannot take 5 cents from no (0) cents.

There is no dime which you can borrow.

Go to the **\$1** column and borrow **\$1**.

Cross out the **4** and put a **3** above the dollar column.

Turn the **\$1** into **10** dimes. Put the **1** a little to the left off the **0** in the dimes place to make it look like **10**.

Now you can borrow 1 dime from the **10** dimes.

That leaves **9** dimes.

The borrowed **1** dime gives you **10** cents.

Now, you can subtract, starting from the right: 5 from 10 is 5

0 from 9 is 9

nothing from 3 is 3

$$\begin{array}{r}
 \overset{3}{\cancel{4}} \overset{10}{\cancel{0}} \overset{10}{0} \\
 - \phantom{\cancel{4}} \phantom{\cancel{0}} \phantom{\cancel{0}} 5 \\
 \hline
 3 \phantom{\cancel{4}} \phantom{\cancel{0}} 9 5
 \end{array}$$

Practice

A.
$$\begin{array}{r} \$7.00 \\ - .39 \\ \hline \end{array}$$

$$\begin{array}{r} \$6.00 \\ - 3.48 \\ \hline \end{array}$$

$$\begin{array}{r} \$9.00 \\ - 4.03 \\ \hline \end{array}$$

To subtract **\$40.00 - \$0.07** the steps go like this:

Go to the **\$ 10** column and borrow **\$10**. That leaves **\$30**.

Turn the **\$10** into **10** single dollars.

Then borrow **1** dollar from the **10** dollars leaving **9** dollars.

The borrowed **1** dollar gives you **10** dimes.

Now you borrow one dime, leaving **9** dimes.

The borrowed dime gives you **10** cents.

Now you can subtract, starting from the right:

7 from 10 is 3

0 from 9 is 9

Nothing from 39 is 39

$$\begin{array}{r}
 \overset{3}{\cancel{4}} \overset{10}{\cancel{0}} \overset{10}{\cancel{0}} \overset{10}{0} \\
 - \phantom{\cancel{4}} \phantom{\cancel{0}} \phantom{\cancel{0}} 0 7 \\
 \hline
 3 \phantom{\cancel{4}} \phantom{\cancel{0}} 9 \phantom{\cancel{0}} 9 3
 \end{array}$$

Check the answer. Do you remember how?

We add the number we subtracted to the answer.

WOW! The answer is correct!

$$\begin{array}{r}
 \phantom{\cancel{4}} \phantom{\cancel{0}} \overset{1}{} \overset{1}{} \overset{1}{} \\
 \phantom{\cancel{4}} \phantom{\cancel{0}} \phantom{\cancel{0}} 0 7 \\
 + 3 \phantom{\cancel{4}} \phantom{\cancel{0}} 9 \phantom{\cancel{0}} 9 3 \\
 \hline
 4 \phantom{\cancel{4}} \phantom{\cancel{0}} 0 \phantom{\cancel{0}} 0 0
 \end{array}$$

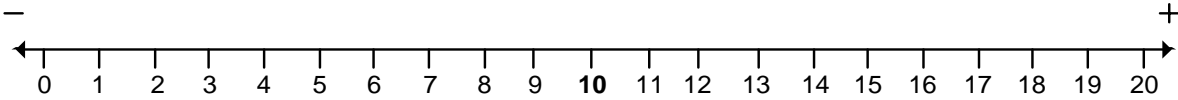
Practice (check your answers):

B.
$$\begin{array}{r} \$30.00 \\ - 18.43 \\ \hline \end{array} \rightleftarrows$$

$$\begin{array}{r} \$50.00 \\ - 2.75 \\ \hline \end{array} \rightleftarrows$$

$$\begin{array}{r} \$100.00 \\ - 75.25 \\ \hline \end{array} \rightleftarrows$$

(Answers on page 90.)



Never Borrow When You Don't Need To

We only have to borrow when the digit you subtract is larger than the digit from which you subtract.

In this problem $\$5.17$ you **can** take 2 cents from the 7 cents, leaves 5.
 $\underline{- 2.32}$ you **cannot** take 3 dimes from 1 dime you have to borrow.

This is how it will look

$$\begin{array}{r} \$ \overset{4}{\cancel{5}} \overset{1}{.} 17 \\ - \quad 2.32 \\ \hline \$ 2.85 \end{array}$$

Start from the right. Right

More examples:

You have to borrow from the ten dollars only.

$$\begin{array}{r} \$ \overset{2}{\cancel{3}} \overset{1}{.} 4.73 \\ - \quad 15.42 \\ \hline \$ 19.31 \end{array}$$

Practice

A. Here you have to borrow from the dimes and the 10 column only, not from the 100 column.

$$\begin{array}{r} \$ 513.52 \text{ dollars} \\ - 409.33 \\ \hline \$ \end{array}$$

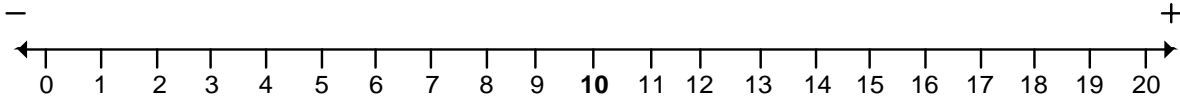
Please finish:

Check by adding. Watch where to borrow and where not to borrow. Don't forget money signs and decimal points.

B. $\$ 30.52$ 4005 5300
 $\underline{- 12.39}$ $\underline{- 132}$ $\underline{- 2103}$ $$

C. 5113 $\$ 70.03$ $\$ 473.05$
 $\underline{- 2709}$ $\underline{- 34.55}$ $\underline{- 182.07}$ $$

(Answers on page 91.)



Adding Long Columns

Some times in our daily lives we need to add a lot of numbers. When we make a list of what we want to buy at the grocery store, we need to check to see that we have enough money to pay for everything on the list.

Example: Let's say we want to know what we can buy when we have \$10 to spend. Here is a list of what we want to buy:

(In California there is no tax on food)

Cottage Cheese	\$2.30
Loaf of bread	2.25
1 lb. apples	1.50
Chips	3.25
Qt. of milk	<u>+ 1.15</u>

Add to get total: \$10.45

Oops, that is **\$.45** more than we have!

How about getting a smaller bag of chips for \$2.75 instead of \$3.25?

The difference between \$3.25 and

$$\begin{array}{r} \text{subtract} \\ \text{is} \end{array} \quad \begin{array}{r} - 2.75 \\ \hline \$.50. \end{array}$$

\$2.75 is \$.50 cents less than \$3.25

Now your list will look like this:

Cottage Cheese	\$2.30
Loaf of bread	2.25
1 lb. apples	1.50
Chips smaller bag	2.75
Qt. of milk	<u>+ 1.15</u>

A. Add to get the total above. \$ _____

Now can you get it all for \$10.00? Will you get any change?

B. If so, how much?

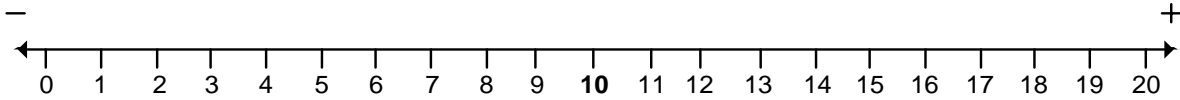
C. Do you have to **add** or **subtract** to find out how much change you will get?

How to Check Addition of Many Numbers

We should get the same answer no matter in which order we add. If we first add $5 + 7 + 8$ and then add $8 + 7 + 5$, and we get different answers, we know something is wrong. **No matter in what order we add, the answers should be the same.**

We can use that idea to check addition of a column with a lot of numbers. Let's say we get the first answer by adding the numbers starting at the top. Then we get the second answer by starting at the bottom. If that answer is not the same as the first answer, we know that at least of one of them is wrong. We then have to check our addition again. So that you are not likely to repeat your mistake, it is best to first write the column all over again, but be sure you copy the numbers correctly. See next page.

(Answers on page 91.)



Example Checking Addition in Long Columns

Below I added the column starting at the bottom. Then I added the same numbers starting at the top. I got two different answers. So - I tried it a third time.

$$\begin{array}{r}
 3 \\
 5 \\
 3 \\
 8 \\
 9 \\
 1 \\
 +7 \\
 \hline
 32
 \end{array}$$

In this one I started from the bottom

$$\begin{array}{r}
 3 \\
 5 \\
 3 \\
 8 \\
 9 \\
 1 \\
 +7 \\
 \hline
 33
 \end{array}$$

In this one I started from the top. Oops, different answer

$$\begin{array}{r}
 3 \\
 5 \\
 3 \\
 8 \\
 9 \\
 1 \\
 +7 \\
 \hline
 33
 \end{array}$$

My third try. Again, I started from the top. I was extra careful. Again I got 33. I decided 33 is the **correct** answer

An Easier Way to Add Long Columns

Since you can add numbers in any order you want, first add those pairs of numbers which add up to 10: 5 + 5, 6 + 4, 7 + 3, 8 + 2, and 9 + 1. That way you can add the 10s first and add the other numbers to the tens. Below is what that will look like.

$$\begin{array}{r}
 2 \\
 3 \\
 5 \\
 6 \\
 7 \\
 + 4 \\
 \hline
 25
 \end{array}$$

$$\begin{array}{r}
 3 + 5 + 6 + 7 + 4 = \\
 10 + 10 + 5 = 25
 \end{array}$$

Practice: Add the following columns by combining numbers which make 10. Cross out the digits as you combine them to make 10s.

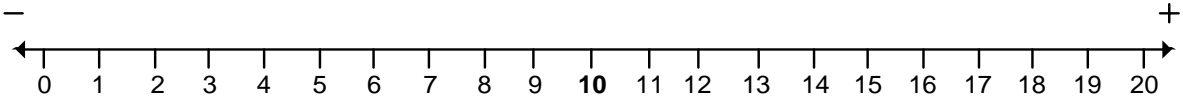
A.

$$\begin{array}{r}
 6 \\
 ~~5~~ \\
 ~~6~~ \\
 ~~5~~ \\
 ~~7~~ \\
 ~~3~~ \\
 + 4 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 8 \\
 3 \\
 6 \\
 4 \\
 2 \\
 7 \\
 + 10 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3 \\
 75 \\
 64 \\
 59 \\
 43 \\
 51 \\
 81 \\
 36 \\
 +25 \\
 \hline
 \end{array}$$

(Answers on page 91.)



How to Keep Track of Your Money

To keep track of how much money you have, all you have to do is add and subtract. You **add** what you have to what you get or receive. You **subtract** what you pay or give away. What is left is your **balance**.

What you receive and put in the bank or credit union is a **deposit**.
A check you write on your account or what you draw out is a **withdrawal**.

Sample checkbook: record.

Check #	Date	Description	Balance
	1/1/06	Deposit (add)	\$30.00
	1/2/06	Deposit paycheck (add)	<u>+ 112.00</u> \$142.00
001	1/4/06	Electric bill (withdrawal, subtract)	<u>- 33.00</u> \$109.00
002	1/4/06	Phone bill (withdrawal, subtract)	<u>- 16.00</u> \$93.00
003	1/5/06	Groceries (withdrawal, subtract)	<u>- 21.00</u> \$72.00

Here is another example using simple numbers. You and two friends run a used furniture business. You keep track of all the monthly expenses and income. When the sum of your income is bigger than your expenses, you are earning money. Here is a very simple example.

March Expenses

Rent	\$200.00
Cleaning supplies	35.00
Four desks	<u>+ 120.00</u>
Total	\$355.00

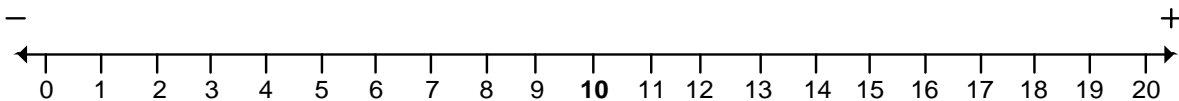
March Income

March 1 - 15	\$210.00
March 16 - 31	<u>+ 276.00</u>
Total	\$486.00

- Did you and your friends earn or lose money in March?
- How much did you earn or lose in March?
- Did you add or subtract to find the difference between your income and expenses?

When we want to buy something special, say, a refrigerator, we first have to add up how much of our earnings we have to spend on things like rent, food and utilities. Then we find out whether there is enough left to buy the refrigerator we want. But, perhaps we also have to pay off a debt.

(Answers on page 91.)



Debts

In your day-to-day personal or business life keeping track of what you have is not always enough. Debts make it more difficult to keep track of your money and know how much you can spend. If you borrowed a small amount and have enough money to pay it off, it is no different from paying any expense. If paying a debt means that you will not be able to pay for food, rent or anything else you badly need, than it is not so easy to figure out what your real money situation is.

You also have to keep track of what you owe. Let us say you are in immediate need of \$55. You are lucky to have a good friend who will lend you the \$55 without charging you interest. You told her you would pay her \$11 each month and in that way pay her back in 5 months. In that case, you will **subtract** what you pay each month from the balance that you owe her. You will owe her less each month. How much you still owe on a certain date is called the **balance** of your debt. Below is an example how your debt account would look.

February 5, you owe	\$55.00
March 5 you pay	<u>-11.00</u>
Now you owe	44.00
April 5 you pay	<u>-11.00</u>
Now you owe	\$33.00

This is the **balance** you owe after your April 5 payment.

Budgets

Planning how much you can spend each month by keeping track of your income and expenses is called budgeting. To budget you have to know your monthly income and what you have to pay out. What you have to pay out will include your regular expenses, how much you have to pay on debts, and possibly, how much you can save. You are now able to handle your money, to budget your money because you know how to add and subtract.

Next Helpful Steps

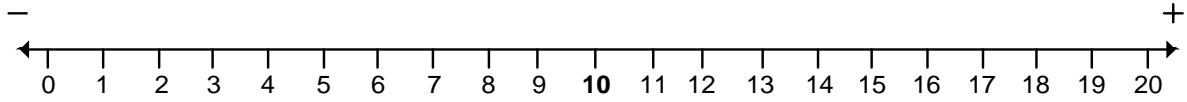
Learning your multiplication and division facts will also help you in handling your money. Multiplication and division facts will also help you pass tests for jobs and school. You will find out that learning those facts is no harder than learning addition and subtraction. You can get a copy of **How to Remember Multiplication and Division Facts - A workbook for adults** from the Community Learning Center. It also uses families of numbers. Here is an example:

$$\begin{array}{l} 2 \times 3 = 6 \quad 6 \div 3 = 2 \\ 3 \times 2 = 6 \quad 6 \div 2 = 3 \end{array}$$

These facts will also help you in handling your money and passing tests for jobs and school. It is no harder than learning addition and subtraction. To get a copy of this workbook, please send a \$5.00 donation to cover the cost of shipping and handling to:

Oak Park Community Learning Center (SFBFS)
3300 3d Avenue
Sacramento CA 95817

Make check payable to Sacramento Food Bank Family Food Bank & Family Services. Donations in addition to the \$5 are always welcome! The SFBFS does not receive government funding to operate its Community Learning Centers.



Answers

Page 6

A. 2 dollars and 6 cents or **\$2.06**

B. 3 dollars 8 dimes and 6 cents or **\$3.86**

Page 9

A. $5 - 2 = 3$

B. $3 - 2 = 1$

C. $5 - 4 = 1$

D. $2 + 2 = 4$

Page 10

A. $4 + 2 = 6$

B. $4 + 1 = 5$

$$\boxed{}\boxed{}\boxed{}\boxed{} + \boxed{} = \boxed{}\boxed{}\boxed{}\boxed{}\boxed{}\boxed{}$$

C. $3 + 4 = 7$

$$\boxed{}\boxed{}\boxed{} + \boxed{}\boxed{}\boxed{}\boxed{} = \boxed{}\boxed{}\boxed{}\boxed{}\boxed{}\boxed{}\boxed{}$$

Page 11

A. $4 - 2 = 2$

B. $4 - 1 = 3$

$$\boxed{}\boxed{}\boxed{}\boxed{} - \boxed{} = \boxed{}\boxed{}\boxed{}\boxed{}$$

C. $6 - 2 = 4$

$$\boxed{}\boxed{}\boxed{}\boxed{}\boxed{}\boxed{} - \boxed{}\boxed{} = \boxed{}\boxed{}\boxed{}\boxed{}\boxed{}$$

D. $7 - 3 = 4$

$$\boxed{}\boxed{}\boxed{}\boxed{}\boxed{}\boxed{}\boxed{} - \boxed{}\boxed{}\boxed{} = \boxed{}\boxed{}\boxed{}\boxed{}\boxed{}$$

Page 12

A. $3 + 6 = 9$

B. $2 + 7 = 9$

C. $8 + 1 = 9$

D. $6 + 7 = 13$

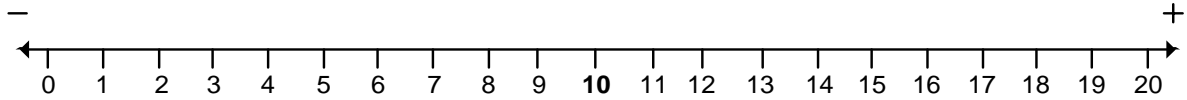
E. $7 + 8 = 15$

Page 13

A. $6 - 2 = 4$

B. $9 - 3 = 6$

C. $7 - 5 = 2$



Page 16

[1, 1, 0]

$$1 + 0 = 1$$

$$0 + 1 = 1$$

$$1 - 0 = 1$$

[1, 1, 2]

$$1 + 1 = 2$$

$$2 - 1 = 1$$

[1, 2, 3]

$$1 + 2 = 3$$

$$2 + 1 = 3$$

$$3 - 1 = 2$$

$$3 - 2 = 1$$

[1, 3, 4]

$$1 + 3 = 4$$

$$3 + 1 = 4$$

$$4 - 3 = 1$$

$$4 - 1 = 3$$

[1, 4, 5]

$$1 + 4 = 5$$

$$4 + 1 = 5$$

$$5 - 1 = 4$$

$$5 - 4 = 1$$

[1, 5, 6]

$$1 + 5 = 6$$

$$5 + 1 = 6$$

$$6 - 1 = 5$$

$$6 - 5 = 1$$

[1, 6, 7]

$$1 + 6 = 7$$

$$6 + 1 = 7$$

$$7 - 1 = 6$$

$$7 - 6 = 1$$

[1, 7, 8]

$$1 + 7 = 8$$

$$7 + 1 = 8$$

$$8 - 1 = 7$$

$$8 - 7 = 1$$

[1, 8, 9]

$$1 + 8 = 9$$

$$8 + 1 = 9$$

$$9 - 1 = 8$$

$$9 - 8 = 1$$

[1, 9, 10]

$$1 + 9 = 10$$

$$9 + 1 = 10$$

$$10 - 1 = 9$$

$$10 - 9 = 1$$

[1, 10, 11]

$$1 + 10 = 11$$

$$10 + 1 = 11$$

$$11 - 1 = 10$$

$$11 - 10 = 1$$

A. 1 dime + 3 dimes = 4 dimes

B. \$.06 - \$.05 = \$.01

C. \$1 + \$8 = \$9

D. \$9 - \$1 = \$8

E. \$.01 + \$.09 = \$.10

F. \$.10 - \$.01 = \$.09

Page 17

A. 9, 1, 8 4, 1, 3 10, 1, 9

Page 18

A. \$10 + \$4 = \$14

B. \$7 - \$5 = \$2

Page 20

A. \$5 + \$1 = \$6

B. He had to take \$1 from his \$6 or \$6 - \$1 = \$5

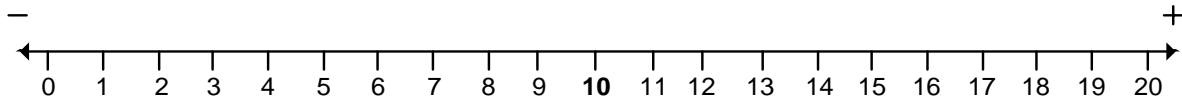
C. 1 cookie + 5 cookies = 6 cookies

D. 8 marbles - 1 marble = 7 marbles

E. 10 + 40 = 50 70 + 10 = 80 \$.30 + \$.10 = \$.40

F. 8 dimes - 1 dime = 7 dimes or 80 cents - 10 cents = 70 cents

G. \$40 - \$10 = \$30 40 - 10 = 30



Page 20 (continued)

H. 1 hundred + 3 hundred = **4 hundred** $100 + 300 = 400$

I. $\$1 + \$3 = \$4$ $100 \text{ cents} + 300 \text{ cents} = 400 \text{ cents}$

J. $\$4,000 - \$1,000 = \$3,000$

K. $\$3,000 + \$1,000 = \$4,000$

Page 21

- | | | | |
|---------------|------------|------------|------------|
| A. 2, 1, 1 | 5, 1, 4 | 6, 1, 5 | 4, 1, 3 |
| B. 40, 10, 30 | 60, 10, 50 | 30, 10, 20 | 2, 0, 2 |
| C. 10, 0, 10 | 8, 1, 7 | 10, 9, 1 | 90, 10, 80 |
| D. 30, 10, 20 | 50, 40, 10 | 7, 1, 6 | 80, 10, 70 |
| E. 7, 1, 6 | 8, 1, 7 | 9, 1, 8 | 20, 10, 10 |

Page 22

- | | | | |
|--------------------|--------------------|--------------------|--------------------|
| [10, 0, 10] | [10, 1, 11] | [10, 2, 12] | [10, 3, 13] |
| $10 + 0 = 10$ | $10 + 1 = 11$ | $10 + 2 = 12$ | $10 + 3 = 13$ |
| $0 + 10 = 10$ | $1 + 10 = 11$ | $2 + 10 = 12$ | $3 + 10 = 13$ |
| $10 - 0 = 10$ | $11 - 10 = 1$ | $12 - 10 = 2$ | $13 - 10 = 3$ |
| | $11 - 1 = 10$ | $12 - 2 = 10$ | $13 - 3 = 10$ |

- | | | | |
|--------------------|--------------------|--------------------|--------------------|
| [10, 4, 14] | [10, 5, 15] | [10, 6, 16] | [10, 7, 17] |
| $10 + 4 = 14$ | $10 + 5 = 15$ | $10 + 6 = 16$ | $10 + 7 = 17$ |
| $4 + 10 = 14$ | $5 + 10 = 15$ | $6 + 10 = 16$ | $7 + 10 = 17$ |
| $14 - 10 = 4$ | $15 - 10 = 5$ | $16 - 10 = 6$ | $17 - 10 = 7$ |
| $14 - 4 = 10$ | $15 - 5 = 10$ | $16 - 6 = 10$ | $17 - 7 = 10$ |

- | | | |
|--------------------|--------------------|---------------------|
| [10, 8, 18] | [10, 9, 19] | [10, 10, 20] |
| $10 + 8 = 18$ | $10 + 9 = 19$ | $10 + 10 = 20$ |
| $8 + 10 = 18$ | $9 + 10 = 19$ | |
| $18 - 10 = 8$ | $19 - 10 = 9$ | $20 - 10 = 10$ |
| $18 - 8 = 10$ | $19 - 9 = 10$ | |

A. 11 cents - 1 cent = **10 cents**

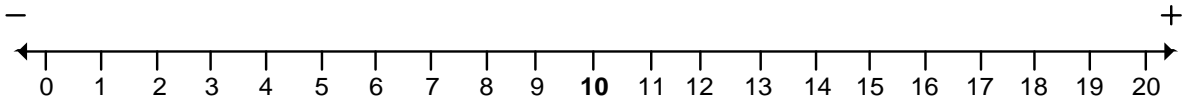
$\$.11 - \$.01 = \$.10$

B. $\$10 + \$5 = \$15$

$\$15 - \$5 = \$10$

C. $\$18 - \$10 = \$8$

$18c - 8c = 10c$



Page 23

A. $\$10 + \$0 = \$10$

B. $\$0 + \$10 = \$10$

C. $\$10 - \$0 = \$10$

D. 10 cents + 1 cent = **11 cents**

E. 11 cents - 1 cent = **10 cents**

F. $\$10 + \$2 = \$12$

$\$3 + \$10 = \$13$

G. $\$12 - \$2 = \$10$

$\$13 - \$10 = \$3$

H. 10 cents + 4 cents = **14 cents**

$\$.04 + \$.10 = \$.14$

I. 14 cents - 4 cents = **10 cents**

$\$.14 - \$.10 = \$.04$

J. $\$10 + \$5 = \$15$

K. $\$15 - \$10 = \$5$

L. $\$6 + \$10 = \$16$

10 cents + 6 cents = **16 cents**

M. $\$16 - \$10 = \$6$

16 cents - 10 cents = **6 cents**

N. $\$14, \$4, \$10$ $\$19, \$9, \$10$ $\$.17, \$.10, \$.07$ **8c, 1c, 7c**

Page 26

A. $\$5 + \$1 = \$6$

$7 - 1 = 6$

$1 + 8 = 9$

B. $4 + 1 = 5$

$6 - 1 = 5$

$3 + 10 = 13$

C. $17 - 7 = 10$

$8 + 10 = 18$

$13 - 10 = 3$

D. $7 + 1 = 8$

$5 - 1 = 4$

$18 - 10 = 8$

E. $13 - 3 = 10$

$4c + 5c = 9c$

$\$8 - \$7 = \$1$

F. $10 - 9 = 1$

$9 - 8 = 1$

$18 - 8 = 10$

G. $90 + 10 = 100$

$9 + 1 = 10$

H. $70 + 10 = 80$

$90 + 10 = 100$

$80 - 10 = 70$

I. $40 + 10 = 50$

$80 - 70 = 10$

$70 - 10 = 60$

J. $400 + 100 = 500$

$900 - 100 = 800$

$700 - 600 = 100$

K. $4000 + 1000 = 5000$

$9000 - 1000 = 8000$

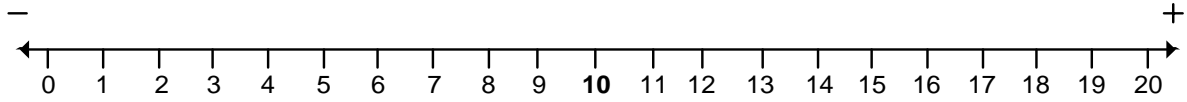
$7000 - 1000 = 6000$

or

$4,000 + 1,000 = 5,000$

$9,000 - 1,000 = 8,000$

$7,000 - 1,000 = 6,000$



Page 27

[2, 0, 2]

$$2 + 0 = 2$$

$$0 + 2 = 2$$

$$2 - 0 = 2$$

[2, 1, 3]

$$2 + 1 = 3$$

$$1 + 2 = 3$$

$$3 - 1 = 2$$

$$3 - 2 = 1$$

[2, 2, 4]

$$2 + 2 = 4$$

$$4 - 2 = 2$$

[2, 3, 5]

$$2 + 3 = 5$$

$$3 + 2 = 5$$

$$5 - 3 = 2$$

$$5 - 2 = 3$$

[2, 4, 6]

$$2 + 4 = 6$$

$$4 + 2 = 6$$

$$6 - 2 = 4$$

$$6 - 4 = 2$$

[2, 5, 7]

$$2 + 5 = 7$$

$$5 + 2 = 7$$

$$7 - 2 = 5$$

$$7 - 5 = 2$$

[2, 6, 8]

$$2 + 6 = 8$$

$$6 + 2 = 8$$

$$8 - 2 = 6$$

$$8 - 6 = 2$$

[2, 7, 9]

$$2 + 7 = 9$$

$$7 + 2 = 9$$

$$9 - 2 = 7$$

$$9 - 7 = 2$$

[2, 8, 10]

$$2 + 8 = 10$$

$$8 + 2 = 10$$

$$10 - 2 = 8$$

$$10 - 8 = 2$$

[2, 9, 11]

$$2 + 9 = 11$$

$$9 + 2 = 11$$

$$11 - 2 = 9$$

$$11 - 9 = 2$$

[2, 10, 12]

$$2 + 10 = 12$$

$$10 + 2 = 12$$

$$12 - 2 = 10$$

$$12 - 10 = 2$$

A. \$5 - \$3 = \$2

\$5 - \$2 = \$3

B. \$.70 - \$.50 = \$.20

\$.07 - \$.02 = \$.05

C. \$90 - \$20 = \$70

\$90.00 - \$70.00 = \$20.00

Page 28

10, 8, 2

3, 2, 1

5, 2, 3

\$6, \$2, \$4

6, 2, 4

50, 20, 30

10, 8, 2

11, 2, 9

8, 2, 6

500, 200, 300

7, 2, 5

\$.11, \$.09, \$.02

\$9, \$7, \$2

11, 2, 9

8, 6, 2

9, 2, 7

10, 8, 2

\$6, \$4, \$2

\$.30, \$.20, \$.10

4, 2, 2

Page 29

A.

$$\begin{array}{r} \$3.45 \\ + 2.21 \\ \hline \$5.66 \end{array}$$

$$\begin{array}{r} \$4.36 \\ - 1.21 \\ \hline \$3.15 \end{array}$$

B.

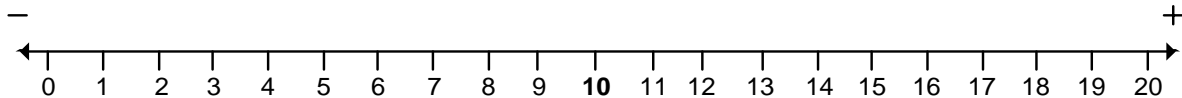
$$\begin{array}{r} \$24 \\ + 12 \\ \hline \$36 \end{array}$$

$$\begin{array}{r} \$435 \\ - 22 \\ \hline \$413 \end{array}$$

C.

$$\begin{array}{r} \$895 \\ - 683 \\ \hline \$212 \end{array}$$

$$\begin{array}{r} \$347 \\ + 12 \\ \hline \$359 \end{array}$$



Page 30

A. $\begin{array}{r} 41 \\ +15 \\ \hline 56 \end{array}$	$\begin{array}{r} 12 \\ +71 \\ \hline 83 \end{array}$	$\begin{array}{r} 13 \\ - 2 \\ \hline 11 \end{array}$	$\begin{array}{r} 29 \\ -18 \\ \hline 11 \end{array}$
---	---	---	---

B. $\begin{array}{r} \$745 \\ +123 \\ \hline \$868 \end{array}$	$\begin{array}{r} \$986 \\ -122 \\ \hline \$864 \end{array}$	$\begin{array}{r} \$832 \\ -122 \\ \hline \$710 \end{array}$
--	--	--

C. $\begin{array}{r} \$321 \\ -200 \\ \hline \$121 \\ + 25 \\ \hline \$146 \end{array}$	$\begin{array}{r} \$1123 \\ + 200 \\ \hline \$1323 \\ - 110 \\ \hline \$1213 \end{array}$
--	---

Page 31

[3, 0, 3] $3 + 0 = 3$ $0 + 3 = 3$ $3 - 0 = 3$	[3, 1, 4] $3 + 1 = 4$ $1 + 3 = 4$ $4 - 3 = 1$ $4 - 1 = 3$	[3, 2, 5] $3 + 2 = 5$ $2 + 3 = 5$ $5 - 3 = 2$ $5 - 2 = 3$	[3, 3, 6] $3 + 3 = 6$ $6 - 3 = 3$
---	--	--	--

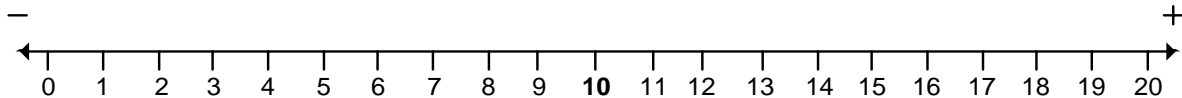
[3, 4, 7] $3 + 4 = 7$ $4 + 3 = 7$ $7 - 3 = 4$ $7 - 4 = 3$	[3, 5, 8] $3 + 5 = 8$ $5 + 3 = 8$ $8 - 3 = 5$ $8 - 5 = 3$	[3, 6, 9] $3 + 6 = 9$ $6 + 3 = 9$ $9 - 3 = 6$ $9 - 6 = 3$	[3, 7, 10] $3 + 7 = 10$ $7 + 3 = 10$ $10 - 3 = 7$ $10 - 7 = 3$
--	--	--	---

[3, 8, 11] $3 + 8 = 11$ $8 + 3 = 11$ $11 - 3 = 8$ $11 - 8 = 3$	[3, 9, 12] $3 + 9 = 12$ $9 + 3 = 12$ $12 - 3 = 9$ $12 - 9 = 3$	[3, 10, 13] $3 + 10 = 13$ $10 + 3 = 13$ $13 - 3 = 10$ $13 - 10 = 3$
---	---	--

A. $\begin{array}{r} \$3 \\ + 2 \\ \hline \$5 \end{array}$	$\begin{array}{r} \$5 \\ - 2 \\ \hline \$3 \end{array}$
---	---

B. $\begin{array}{r} \$.07 \\ - .04 \\ \hline \$.03 \end{array}$	$\begin{array}{r} \$.07 \\ - .03 \\ \hline \$.04 \end{array}$
---	---

C. $\begin{array}{r} \$6 \\ + 3 \\ \hline \$9 \end{array}$	$\begin{array}{r} \$9 \\ - 3 \\ \hline \$6 \end{array}$
---	---



Page 31 (continued)

D. \$11	\$.11
$\begin{array}{r} - .08 \\ \hline \end{array}$	$\begin{array}{r} - .03 \\ \hline \end{array}$
\$.03	\$.08

E. \$9	\$12
$\begin{array}{r} - 3 \\ \hline \end{array}$	$\begin{array}{r} - 3 \\ \hline \end{array}$
\$6	\$9

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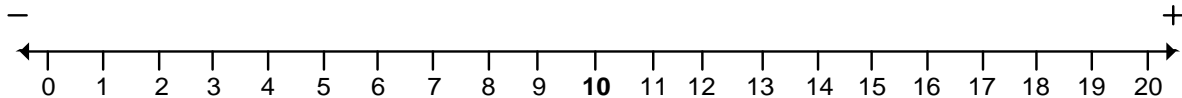
- | | | | |
|-------------|-----------|----------|----------|
| A. 12, 3, 9 | 7, 3, 4 | 11, 8, 3 | 10, 7, 3 |
| B. 8, 3, 5 | 11, 3, 8 | 3, 0, 3 | 9, 3, 6 |
| C. 11, 3, 8 | 13, 10, 3 | 12, 9, 3 | 10, 7, 3 |

D. $2 + 3 + 3 = 8$

E. 2	3	1	3	1
1	2	3	1	2
3	1	2	2	3
$\begin{array}{r} +2 \\ \hline \end{array}$	$\begin{array}{r} +1 \\ \hline \end{array}$	$\begin{array}{r} +2 \\ \hline \end{array}$	$\begin{array}{r} +1 \\ \hline \end{array}$	$\begin{array}{r} +1 \\ \hline \end{array}$
8	7	8	7	7

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- | | | | |
|------------------|--------------|--------------|--------------|
| A. $13 - 1 = 12$ | $9 - 3 = 6$ | $2 + 8 = 10$ | $4 + 2 = 6$ |
| $13 - 2 = 11$ | $7 + 3 = 10$ | $9 + 3 = 12$ | $5 + 3 = 8$ |
| $13 - 3 = 10$ | $8 + 3 = 11$ | $7 + 2 = 9$ | $8 + 3 = 11$ |
| $12 - 3 = 9$ | $10 - 3 = 7$ | $3 + 8 = 11$ | $3 + 6 = 9$ |
| B. $12 - 2 = 10$ | $10 - 2 = 8$ | $2 + 6 = 8$ | $9 + 2 = 11$ |
| $8 + 2 = 10$ | $10 - 1 = 9$ | $7 + 3 = 10$ | $8 + 2 = 10$ |
| $8 + 3 = 11$ | $7 - 1 = 6$ | $4 + 3 = 7$ | $3 + 2 = 5$ |
| $11 - 3 = 8$ | $7 - 3 = 4$ | $2 + 4 = 6$ | $2 + 7 = 9$ |
| C. $11 - 2 = 9$ | $6 + 3 = 9$ | $5 + 2 = 7$ | $3 + 7 = 10$ |
| $9 + 2 = 11$ | $9 - 3 = 6$ | $2 + 9 = 11$ | $3 + 9 = 12$ |
| $9 + 3 = 12$ | $9 - 2 = 7$ | $6 + 3 = 9$ | $3 + 4 = 7$ |
| $12 - 3 = 9$ | $7 - 3 = 4$ | $11 - 9 = 2$ | $6 + 2 = 8$ |
| D. $12 - 2 = 10$ | $6 + 3 = 9$ | $6 + 3 = 9$ | $5 - 3 = 2$ |
| $11 - 1 = 10$ | $9 - 3 = 6$ | $2 + 3 = 5$ | $9 - 3 = 6$ |
| $8 - 6 = 2$ | $9 - 2 = 7$ | $12 - 9 = 3$ | $11 - 9 = 2$ |
| $7 - 4 = 3$ | $7 - 3 = 4$ | $10 - 7 = 3$ | $7 - 2 = 5$ |
| E. $11 - 8 = 3$ | $3 + 4 = 7$ | $9 - 7 = 2$ | $6 - 4 = 2$ |
| $9 - 2 = 7$ | $3 + 5 = 8$ | $5 - 2 = 3$ | $7 - 3 = 4$ |
| $12 - 3 = 9$ | $1 + 5 = 6$ | $10 - 2 = 8$ | $10 - 3 = 7$ |
| $10 - 8 = 2$ | $3 + 6 = 9$ | $11 - 2 = 9$ | $8 - 6 = 2$ |



Page 33 (continued)

F. $\begin{array}{r} 413 \\ -213 \\ \hline 200 \end{array}$	$\begin{array}{r} 16 \\ - 5 \\ \hline 11 \end{array}$	$\begin{array}{r} 32 \\ -11 \\ \hline 21 \end{array}$	$\begin{array}{r} 321 \\ -121 \\ \hline 200 \end{array}$
---	---	---	--

G. $\begin{array}{r} 14 \\ 732 \\ +123 \\ \hline 869 \end{array}$

H. $\begin{array}{r} \$34 \\ 33 \\ +21 \\ \hline \$88 \end{array}$	$\begin{array}{r} 23 \\ 744 \\ + 2 \\ \hline 769 \end{array}$
--	---

I. $\begin{array}{r} .123 \\ 31 \\ +421 \\ \hline 575 \end{array}$	$\begin{array}{r} \$5.12 \\ 2.32 \\ + .23 \\ \hline \$7.67 \end{array}$
--	---

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A. $\begin{array}{r} 1 \\ 23 \\ + 39 \\ \hline 62 \end{array}$	$\begin{array}{r} 1 \\ 13 \\ + 86 \\ \hline 99 \end{array}$	$\begin{array}{r} 1 \\ 17 \\ + 43 \\ \hline 60 \end{array}$	$\begin{array}{r} 1 \\ 143 \\ + 38 \\ \hline 181 \end{array}$
--	---	---	---

B. $\begin{array}{r} 1 \\ 43 \text{ cents} \\ + 9 \text{ cents} \\ \hline 52 \text{ cents} \end{array}$	$\begin{array}{r} 1 \\ 25 \text{ cents} \\ +15 \text{ cents} \\ \hline 40 \text{ cents} \end{array}$	$\begin{array}{r} 1 \\ \$3.70 \\ + .30 \\ \hline \$4.00 \end{array}$	$\begin{array}{r} 1 \\ \$48 \\ + 32 \\ \hline \$80 \end{array}$
---	--	--	---

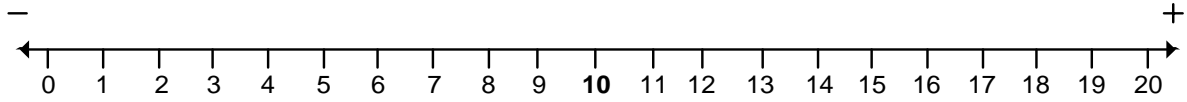
Page 38

A. $\begin{array}{r} 3 \\ \cancel{4}^1 2 \text{ cents} \\ - 9 \text{ cents} \\ \hline 33 \text{ cents} \end{array}$	$\begin{array}{r} 3 \\ \$ \cancel{.4}^1 3 \\ - .18 \\ \hline \$.35 \end{array}$	$\begin{array}{r} 3 \\ \$ \cancel{.4}^1 2 \\ - .08 \\ \hline \$.34 \end{array}$	$\begin{array}{r} 4 \\ \$ \cancel{5}^1 8 \\ - 8 \\ \hline \$ 43 \end{array}$
---	--	--	--

B. $\begin{array}{r} 1 \\ \$ 4 \cancel{.2}^1 1 \\ - 1.09 \\ \hline \$ 3.12 \end{array}$	$\begin{array}{r} 3 \\ \$ 3 \cancel{.4}^1 1 \\ - 1.02 \\ \hline \$ 2.39 \end{array}$	$\begin{array}{r} 3 \\ \$ \cancel{4}^1 20 \\ - .30 \\ \hline \$ 3.90 \end{array}$	$\begin{array}{r} 4 \\ \$ \cancel{2}^1 0 \\ - 7 \\ \hline \$ 13 \end{array}$
---	--	---	--

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A. $\begin{array}{r} 57 \\ - 2 \\ \hline 55 \end{array}$	$\begin{array}{r} 4 \\ \cancel{5}^1 2 \\ - 9 \\ \hline 43 \end{array}$	$\begin{array}{r} 3 \\ \cancel{4}^1 1 \\ - 9 \\ \hline 32 \end{array}$	$\begin{array}{r} 2 \\ \cancel{3}^1 2 \\ - 9 \\ \hline 23 \end{array}$
--	--	--	--



Page 40 (continued)

B.
$$\begin{array}{r} \overset{6}{\sqrt{}} 10 \\ - \quad 1 \\ \hline 6 \quad 9 \end{array}$$

$$\begin{array}{r} \overset{7}{\sqrt{}} 11 \\ - \quad 9 \\ \hline 7 \quad 2 \end{array}$$

$$\begin{array}{r} \overset{2}{\sqrt{}} 10 \\ - \quad 2 \\ \hline 2 \quad 8 \end{array}$$

$$\begin{array}{r} \overset{2}{\sqrt{}} 10 \\ - \quad 8 \\ \hline 2 \quad 2 \end{array}$$

C.
$$\begin{array}{r} \overset{6}{\sqrt{}} 11 \\ - \quad 9 \\ \hline 6 \quad 2 \end{array}$$

$$\begin{array}{r} \overset{6}{\sqrt{}} 11 \\ - \quad 8 \\ \hline 6 \quad 3 \end{array}$$

$$\begin{array}{r} 7 \quad 9 \\ - \quad 8 \\ \hline 7 \quad 1 \end{array}$$

$$\begin{array}{r} 7 \quad 9 \\ - \quad 9 \\ \hline 7 \quad 0 \end{array}$$

D.
$$\begin{array}{r} \overset{6}{\sqrt{}} 12 \\ - \quad 9 \\ \hline 6 \quad 3 \end{array}$$

$$\begin{array}{r} \overset{5}{\sqrt{}} 10 \\ - \quad 2 \\ \hline 5 \quad 8 \end{array}$$

$$\begin{array}{r} \overset{7}{\sqrt{}} 10 \\ - \quad 3 \\ \hline 7 \quad 7 \end{array}$$

$$\begin{array}{r} \overset{7}{\sqrt{}} 12 \\ - \quad 3 \\ \hline 7 \quad 9 \end{array}$$

E.
$$\begin{array}{r} \overset{1}{\$} \overset{2}{.} 11 \\ - \quad 0 \quad 9 \\ \hline \overset{1}{\$} \overset{1}{.} 2 \end{array}$$

$$\begin{array}{r} \overset{1}{\$} \overset{2}{.} 19 \\ - \quad 1 \quad 0 \\ \hline \overset{1}{\$} \overset{1}{.} 9 \end{array}$$

$$\begin{array}{r} \$75.00 \\ -72.00 \\ \hline \$ \quad 3.00 \end{array}$$

F. 5 games lost + 2 games tied = 7 games not won
 20 total games - 7 games not won = **13 games won**

G.
$$\begin{array}{r} \$1 \overset{7}{3} \overset{1}{.} \overset{5}{8} \\ - \quad 8 \overset{7}{.} \overset{8}{7} \\ \hline \$ \quad 5 \overset{0}{.} \overset{7}{7} \end{array}$$
H.
$$\begin{array}{r} \$1 \overset{2}{3} \overset{1}{.} \overset{5}{2} \overset{5}{5} \\ -1 \quad 1 \overset{5}{.} \overset{0}{0} \\ \hline \$ \quad 1 \overset{7}{.} \overset{5}{5} \end{array}$$

I.
$$\begin{array}{r} \overset{4}{\$} \overset{5}{5} \overset{1}{0} \\ -3 \quad 3 \\ \hline \overset{1}{\$} \quad 7 \end{array}$$
J.
$$\begin{array}{r} 1 \quad 0 \text{ slices} \\ - \quad 6 \text{ slices} \\ \hline 4 \text{ slices} \end{array}$$

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[4, 0, 4]
 4 + 0 = 4
 0 + 4 = 4
 4 - 0 = 4

[4, 1, 5]
 4 + 1 = 5
 1 + 4 = 5
 5 - 4 = 1
 5 - 1 = 4

[4, 2, 6]
 4 + 2 = 6
 2 + 4 = 6
 6 - 4 = 2
 6 - 2 = 4

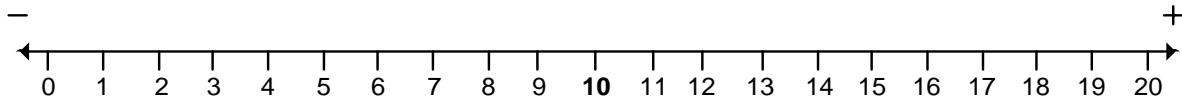
[4, 3, 7]
 4 + 3 = 7
 3 + 4 = 7
 7 - 4 = 3
 7 - 3 = 4

[4, 4, 8]
 4 + 4 = 8
 8 - 4 = 4

[4, 5, 9]
 4 + 5 = 9
 5 + 4 = 9
 9 - 4 = 5
 9 - 5 = 4

[4, 6, 10]
 4 + 6 = 10
 6 + 4 = 10
 10 - 4 = 6
 10 - 6 = 4

[4, 7, 11]
 4 + 7 = 11
 7 + 4 = 11
 11 - 4 = 7
 11 - 7 = 4



Page 41 (continued)

[4, 8, 12]

$$\begin{aligned} 4 + 8 &= 12 \\ 8 + 4 &= 12 \\ 12 - 4 &= 8 \\ 12 - 8 &= 4 \end{aligned}$$

[4, 9, 13]

$$\begin{aligned} 4 + 9 &= 13 \\ 9 + 4 &= 13 \\ 13 - 4 &= 9 \\ 13 - 9 &= 4 \end{aligned}$$

[4, 10, 14]

$$\begin{aligned} 4 + 10 &= 14 \\ 10 + 4 &= 14 \\ 14 - 4 &= 10 \\ 14 - 10 &= 4 \end{aligned}$$

A.
$$\begin{array}{r} \$55 \\ - 44 \\ \hline \$11 \end{array}$$

B.
$$\begin{array}{r} \$66 \\ - 62 \\ \hline \$ 4 \end{array}$$

C.
$$\begin{array}{r} \$88 \\ - 48 \\ \hline \$40 \end{array}$$

D.
$$\begin{array}{r} \$1.10 \\ - .04 \\ \hline \$.06 \end{array}$$

$$\begin{array}{r} \overset{0}{\$}1.00 \\ - .60 \\ \hline \$.40 \end{array}$$

E.
$$\begin{array}{r} \overset{1}{\$}1.30 \\ - .90 \\ \hline \$.40 \end{array}$$

$$\begin{array}{r} \$ 1.90 \\ + .40 \\ \hline \$1.30 \end{array}$$

F.
$$\begin{array}{r} \$14 \\ - 10 \\ \hline \$ 4 \end{array}$$

$$\begin{array}{r} \$1.40 \\ - 1.00 \\ \hline \$.40 \end{array}$$

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A.
$$\begin{aligned} 6 + 4 &= 10 \\ 8 + 4 &= 12 \\ 6 + 3 &= 9 \\ 4 + 8 &= 12 \end{aligned}$$

$$\begin{aligned} 4 + 9 &= 13 \\ 5 + 4 &= 9 \\ 3 + 3 &= 6 \\ 3 + 4 &= 7 \end{aligned}$$

$$\begin{aligned} 7 + 4 &= 11 \\ 4 + 4 &= 8 \\ 7 + 3 &= 10 \\ 4 + 7 &= 11 \end{aligned}$$

$$\begin{aligned} 3 + 4 &= 7 \\ 3 + 9 &= 12 \\ 8 + 3 &= 11 \\ 4 + 6 &= 10 \end{aligned}$$

B.
$$\begin{aligned} 12 - 9 &= 3 \\ 11 - 8 &= 3 \\ 12 - 4 &= 8 \end{aligned}$$

$$\begin{aligned} 13 - 4 &= 9 \\ 12 - 8 &= 4 \\ 10 - 7 &= 3 \end{aligned}$$

$$\begin{aligned} 11 - 3 &= 8 \\ 13 - 9 &= 4 \\ 10 - 2 &= 8 \end{aligned}$$

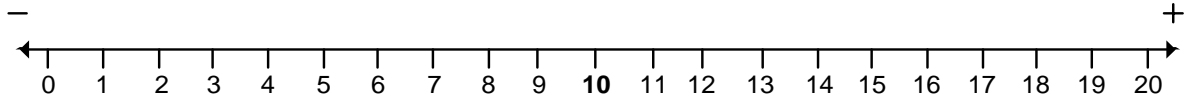
$$\begin{aligned} 12 - 3 &= 9 \\ 9 - 5 &= 4 \\ 10 - 4 &= 6 \end{aligned}$$

C.
$$\begin{aligned} 2 + 1 &= 3 \\ 3 + 1 &= 4 \\ 7 + 2 &= 9 \\ 5 - 2 &= 3 \end{aligned}$$

$$\begin{aligned} 4 - 2 &= 2 \\ 3 + 7 &= 10 \\ 4 + 4 &= 8 \\ 4 - 1 &= 3 \end{aligned}$$

$$\begin{aligned} 4 + 5 &= 9 \\ 3 + 8 &= 11 \\ 4 + 7 &= 11 \\ 2 + 5 &= 7 \end{aligned}$$

$$\begin{aligned} 3 + 9 &= 12 \\ 9 - 3 &= 6 \\ 6 + 2 &= 8 \\ 5 - 4 &= 1 \end{aligned}$$



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D. $13 - 9 = 4$ $4 + 6 = 10$ $7 + 2 = 9$ $2 + 9 = 11$
 $11 - 3 = 8$ $12 - 9 = 3$ $11 - 4 = 7$ $12 - 8 = 4$
 $13 - 10 = 3$ $13 - 9 = 4$ $11 - 2 = 9$ $13 - 4 = 9$
 $10 - 2 = 8$ $10 + 2 = 12$ $4 + 8 = 12$ $10 - 3 = 7$

E.
$$\begin{array}{r} 34 \\ +95 \\ \hline 129 \end{array}$$

$$\begin{array}{r} 51 \\ 62 \\ -36 \\ \hline 26 \end{array}$$

$$\begin{array}{r} 1 \\ 54 \\ +38 \\ \hline 92 \end{array}$$

$$\begin{array}{r} \$3.45 \\ +5.43 \\ \hline \$8.88 \end{array}$$

F.
$$\begin{array}{r} 847 \\ -324 \\ \hline 523 \end{array}$$

$$\begin{array}{r} 31 \\ 43 \\ -6 \\ \hline 37 \end{array}$$

$$\begin{array}{r} \$.42 \\ - .06 \\ \hline \$.36 \end{array}$$

$$\begin{array}{r} \$.41 \\ - .13 \\ \hline \$.28 \end{array}$$

G. $13 - 8 = 5$ vacation days

H.
$$\begin{array}{r} 4 \\ \$5.10 \\ - 4 \\ \hline \$ 4 6 \end{array}$$

I.
$$\begin{array}{r} \$4.00 \\ + 2.60 \\ \hline \$6.60 \end{array}$$

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A.
$$\begin{array}{r} 6 \\ - 4 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 7 \\ - 4 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 10 \\ - 4 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 13 \\ - 3 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 4 \\ + 3 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 3 \\ +10 \\ \hline 13 \end{array}$$

B.
$$\begin{array}{r} 12 \\ - 4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 12 \\ - 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 12 \\ - 3 \\ \hline 9 \end{array}$$

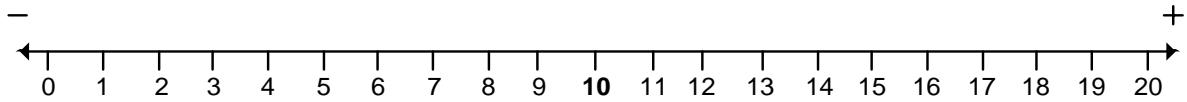
$$\begin{array}{r} 11 \\ - 4 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 4 \\ + 8 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 2 \\ +10 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 3 \\ + 9 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 4 \\ + 7 \\ \hline 11 \end{array}$$



Page 44 (continued)

$\begin{array}{r} \text{c. } \cancel{5} 1 \\ -2 \ 3 \\ \hline 3 \ 9 \end{array}$ $\begin{array}{r} 1 \\ 2 \ 3 \\ \hline 3 \ 9 + \\ \hline 6 \ 2 \end{array}$	$\begin{array}{r} \cancel{5} 1 \\ -3 \ 6 \\ \hline 2 \ 6 \end{array}$ $\begin{array}{r} 1 \\ 3 \ 6 \\ \hline 2 \ 6 + \\ \hline 6 \ 2 \end{array}$	$\begin{array}{r} \cancel{6} 1 \\ -3 \ 4 \\ \hline 3 \ 9 \end{array}$ $\begin{array}{r} 1 \\ 3 \ 9 \\ \hline 3 \ 4 + \\ \hline 7 \ 3 \end{array}$
--	---	---

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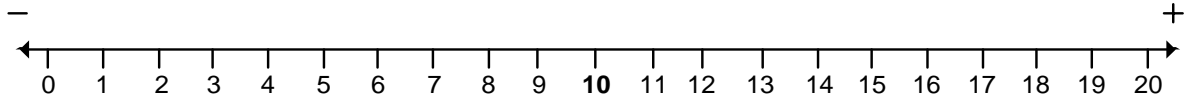
<p>[5, 0, 5]</p> $5 + 0 = 5$ $0 + 5 = 5$ $5 - 0 = 5$	<p>[5, 1, 6]</p> $5 + 1 = 6$ $1 + 5 = 6$ $6 - 5 = 5$ $6 - 1 = 1$	<p>[5, 2, 7]</p> $5 + 2 = 7$ $2 + 5 = 7$ $7 - 5 = 2$ $7 - 2 = 5$	<p>[5, 3, 8]</p> $5 + 3 = 8$ $3 + 5 = 8$ $8 - 5 = 3$ $8 - 3 = 5$
<p>[5, 4, 9]</p> $5 + 4 = 9$ $4 + 5 = 9$ $9 - 5 = 4$ $9 - 4 = 5$	<p>[5, 5, 10]</p> $5 + 5 = 10$ $10 - 5 = 5$	<p>[5, 6, 11]</p> $5 + 6 = 11$ $6 + 5 = 11$ $11 - 5 = 6$ $11 - 6 = 5$	<p>[5, 7, 12]</p> $5 + 7 = 12$ $7 + 5 = 12$ $12 - 5 = 7$ $12 - 7 = 5$
<p>[5, 8, 13]</p> $5 + 8 = 13$ $8 + 5 = 13$ $13 - 5 = 8$ $13 - 8 = 5$	<p>[5, 9, 14]</p> $5 + 9 = 14$ $9 + 5 = 14$ $14 - 5 = 9$ $14 - 9 = 5$	<p>[5, 10, 15]</p> $5 + 10 = 15$ $10 + 5 = 15$ $15 - 5 = 10$ $15 - 10 = 5$	

<p>A. \$6</p> $\begin{array}{r} - 5 \\ \hline \$1 \end{array}$	$\begin{array}{r} \$.60 \\ - .10 \\ \hline \$.50 \end{array}$
---	---

<p>B. \$9.00</p> $\begin{array}{r} - 4.00 \\ \hline \$5.00 \end{array}$	$\begin{array}{r} \$.04 \\ + .05 \\ \hline \$.09 \end{array}$
--	---

<p>C. \$13</p> $\begin{array}{r} - 8 \\ \hline \$ 5 \end{array}$	$\begin{array}{r} \$.13 \\ - .05 \\ \hline \$.08 \end{array}$
---	---

<p>D. \$15</p> $\begin{array}{r} - 10 \\ \hline \$ 5 \end{array}$	$\begin{array}{r} \$15 \\ - 5 \\ \hline \$10 \end{array}$
--	---



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A. $5 + 7 = 12$ $8 + 5 = 13$ $6 + 5 = 11$ $9 - 4 = 5$
 $9 - 2 = 7$ $5 + 4 = 9$ $11 - 6 = 5$ $13 - 8 = 5$
 $11 - 5 = 6$ $3 + 5 = 8$ $5 + 2 = 7$ $13 - 5 = 8$
 $5 + 9 = 14$ $12 - 5 = 7$ $8 - 5 = 3$ $7 - 5 = 2$

B. $10 - 5 = 5$ $5 + 6 = 11$ $5 + 8 = 13$ $5 + 5 = 10$
 $12 - 7 = 5$ $5 + 3 = 8$ $9 + 5 = 14$ $4 + 5 = 9$
 $14 - 9 = 5$ $2 + 5 = 7$ $14 - 5 = 9$ $9 - 5 = 4$
 $14 - 5 = 9$ $19 - 15 = 4$ $8 - 3 = 5$ $19 - 5 = 14$

C. $5 + 5 - 1 - 5 + 3 + 9 - 2 = 14$
 $5 + 3 + 4 - 3 - 4 + 6 - 1 = 10$
 $6 + 5 - 2 - 1 - 3 + 5 = 10$

D. When you add the answer is **larger**.

E. When you subtract the answer is **smaller**.

D. $\$12 - \$10 = \$2$

F. $\$2 + \$4 + \$4 = \10

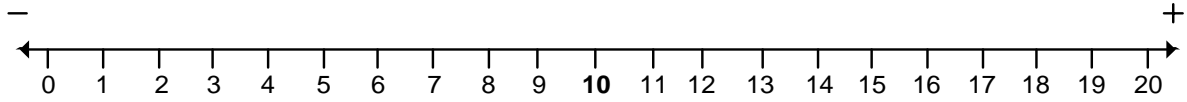
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G. 10, 6, 4	12, 8, 4	9, 6, 3	10, 4, 6
H. 11, 7, 4	10, 7, 3	12, 3, 9	10, 4, 6
I. 12, 3, 9	11, 3, 8	12, 8, 4	12, 4, 8
J. 13, 9, 4	10, 6, 4	13, 4, 9	12, 9, 3
K. 12, 5, 7	13, 5, 8	13, 8, 5	14, 9, 5
L. 15, 10, 5	14, 9, 5	11, 6, 5	13, 4, 9

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[6, 6, 12]	[6, 7, 13]
$6 + 6 = 12$	$6 + 7 = 13$
$12 - 6 = 6$	$7 + 6 = 13$
	$13 - 6 = 7$
	$13 - 7 = 6$

[6, 8, 14]	[6, 9, 15]	[6, 10, 16]
$6 + 8 = 14$	$6 + 9 = 15$	$6 + 10 = 16$
$8 + 6 = 14$	$9 + 6 = 15$	$10 + 6 = 16$
$14 - 6 = 8$	$15 - 6 = 9$	$16 - 6 = 10$
$14 - 8 = 6$	$15 - 9 = 6$	$16 - 10 = 6$



Page 48 (continued)

A. $\begin{array}{r} \$13.00 \\ - 6.00 \\ \hline \$7.00 \end{array}$ $\begin{array}{r} \$13.00 \\ - 6.00 \\ \hline \$7.00 \end{array}$

B. $\begin{array}{r} \$14 \\ - 6 \\ \hline \$8 \end{array}$ $\begin{array}{r} \$14 \\ - 6 \\ \hline \$8 \end{array}$

C. $\begin{array}{r} \$1500 \\ + 900 \\ \hline \$2400 \end{array}$ $\begin{array}{r} \$1500 \\ - 600 \\ \hline \$900 \end{array}$

D. $\begin{array}{r} \$1.60 \\ - 1.00 \\ \hline \$.60 \end{array}$ $\begin{array}{r} \$1.60 \\ - .60 \\ \hline \$1.00 \end{array}$

E. $6 + 7 = 13$ $3 + 6 = 9$ $5 + 6 = 11$ $10 - 6 = 4$
 $15 - 6 = 9$ $14 - 6 = 8$ $6 + 6 = 12$ $9 - 3 = 6$
 $8 - 6 = 2$ $7 + 6 = 13$ $11 - 6 = 5$ $6 + 4 = 10$

F. $6 + 8 = 14$ $6 + 2 = 8$ $14 - 8 = 6$ $4 + 6 = 10$
 $13 - 6 = 7$ $2 + 6 = 8$ $6 + 9 = 15$ $11 - 5 = 6$
 $15 - 9 = 6$ $6 + 3 = 9$ $10 - 4 = 6$ $9 + 6 = 15$

G. $\begin{array}{r} 1 \\ \$6.75 \\ + .60 \\ \hline \$7.35 \end{array}$ $\begin{array}{r} 1 \\ \$7.25 \\ + .60 \\ \hline \$7.85 \end{array}$ $\begin{array}{r} 1 \\ \$8.90 \\ + .60 \\ \hline \$9.50 \end{array}$

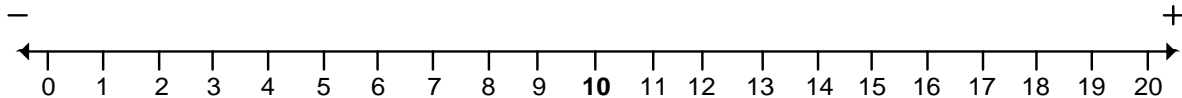
H. 60 minutes - 20 minutes = **40 minutes**

I. 15 candies - 9 candies = **6 candies**

J. 8 hours + 6 hours = **14 hours**

K. 7 miles + 6 miles = **13 miles**

L. \$13 - \$7 = **\$6**



Page 49

A. $2 + 1 = 3$ $1 + 2 = 3$

B. $3 - 1 = 2$ $1 + 2 = 3$
 $3 - 2 = 1$ $2 + 1 = 3$

C. $3 + 1 = 4$ $4 - 1 = 3$
 $2 + 2 = 4$ $4 - 2 = 2$

D. $4 - 1 = 3$ $3 + 1 = 4$
 $4 - 2 = 2$ $2 + 2 = 4$
 $4 - 3 = 1$ $1 + 3 = 4$

E. $4 + 1 = 5$ $5 - 1 = 4$
 $3 + 2 = 5$ $5 - 2 = 3$

F. $5 - 4 = 1$ $4 + 1 = 5$
 $5 - 3 = 2$ $3 + 2 = 5$
 $5 - 2 = 3$ $2 + 3 = 5$
 $5 - 1 = 4$ $1 + 4 = 5$

G. $5 + 1 = 6$ $6 - 1 = 5$
 $4 + 2 = 6$ $6 - 2 = 4$
 $3 + 3 = 6$ $6 - 3 = 3$

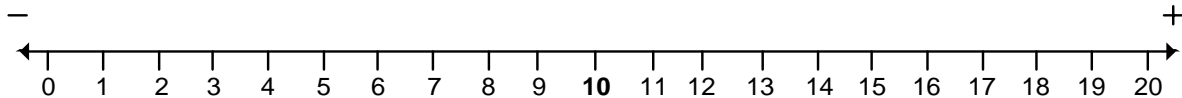
H. $6 - 1 = 5$ $5 + 1 = 6$
 $6 - 2 = 4$ $4 + 2 = 6$
 $6 - 3 = 3$ $3 + 3 = 6$
 $6 - 4 = 2$ $2 + 4 = 6$
 $6 - 5 = 1$ $1 + 5 = 6$

Page 50

A. $6 + 4 = 10$ $5 + 3 = 8$ $7 - 2 = 5$ $5 + 8 = 13$
 $13 - 9 = 4$ $2 + 4 = 6$ $10 - 6 = 4$ $11 - 7 = 4$
 $8 - 2 = 6$ $6 + 7 = 13$ $8 - 3 = 5$ $13 - 5 = 8$
 $13 - 8 = 5$ $9 - 3 = 6$ $4 + 9 = 13$ $5 + 2 = 7$

B. $12 - 4 = 8$ $5 + 7 = 12$ $6 + 2 = 8$ $12 - 6 = 6$
 $4 + 1 = 5$ $6 + 5 = 11$ $4 + 5 = 9$ $6 + 8 = 14$
 $7 + 5 = 12$ $2 + 6 = 8$ $9 - 5 = 4$ $13 - 4 = 9$
 $5 + 9 = 14$ $13 - 6 = 7$ $5 + 5 = 10$ $9 - 6 = 3$

C. $5 + 6 = 11$ $1 + 4 = 5$ $12 - 7 = 5$ $8 - 6 = 2$
 $7 - 4 = 3$ $6 + 3 = 9$ $10 - 4 = 6$ $11 - 5 = 6$
 $3 + 6 = 9$ $13 - 7 = 6$ $11 - 6 = 5$ $4 + 4 = 8$
 $14 - 5 = 9$ $7 - 5 = 2$ $14 - 6 = 8$ $15 - 6 = 9$



Page 50 (continued)

D. $12 - 8 = 4$ $4 + 8 = 12$ $8 + 5 = 13$ $2 + 5 = 7$
 $8 - 5 = 3$ $5 - 1 = 4$ $9 - 4 = 5$ $6 - 2 = 4$
 $4 + 6 = 10$ $4 + 3 = 7$ $4 + 7 = 11$ $6 + 9 = 15$
 $3 + 5 = 8$ $5 + 4 = 9$ $12 - 5 = 7$ $8 + 6 = 14$

E. $7 - 3 = 4$ $9 + 6 = 15$ $6 + 6 = 12$ $7 + 4 = 11$
 $10 - 5 = 5$ $9 + 5 = 14$ $5 - 4 = 1$ $6 - 4 = 2$
 $11 - 4 = 7$ $4 + 2 = 6$ $14 - 9 = 5$ $8 - 4 = 4$
 $7 + 6 = 13$ $15 - 9 = 6$ $8 + 4 = 12$ $3 + 4 = 7$

F $4 + 5 + 1 - 5 + 6 - 10 + 4 = 5$
 $6 + 3 + 2 - 1 - 5 + 3 + 2 = 10$

G. $\$7 + \$6 = \$13$

H. $12 \text{ persons} - 5 \text{ persons} = 7 \text{ persons}$

I. $14 \text{ problems} - 6 \text{ problems} = 8 \text{ problems}$

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$7 + 7 = 14$ $7 + 8 = 15$ $7 + 9 = 16$ $7 + 10 = 17$
 $14 - 7 = 7$ $8 + 7 = 15$ $9 + 7 = 16$ $10 + 7 = 17$
 $15 - 7 = 8$ $16 - 7 = 9$ $17 - 7 = 10$
 $15 - 8 = 7$ $16 - 9 = 7$ $17 - 10 = 7$

A.
$$\begin{array}{r} 15 \text{ cents} \\ - 7 \text{ cents} \\ \hline 8 \text{ cents} \end{array}$$

$$\begin{array}{r} 15 \text{ dimes} \\ - 8 \text{ dimes} \\ \hline 7 \text{ dimes} \end{array}$$

B.
$$\begin{array}{r} \$1.60 \\ - .90 \\ \hline \$.70 \end{array}$$

$$\begin{array}{r} \$.16 \\ - .07 \\ \hline \$.09 \end{array}$$

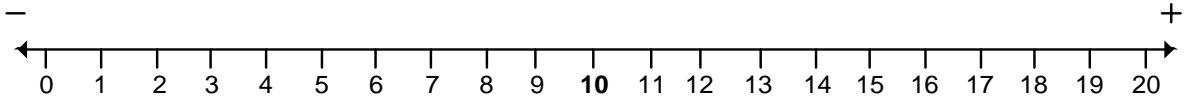
C. $8 + 7 = 15$ $7 + 4 = 11$ $11 - 4 = 7$ $12 - 5 = 7$
 $6 + 7 = 13$ $14 - 7 = 7$ $15 - 8 = 7$ $15 - 7 = 8$
 $13 - 7 = 6$ $12 - 6 = 6$ $14 - 6 = 8$ $16 - 7 = 9$
 $15 - 6 = 9$ $16 - 9 = 7$ $16 - 10 = 6$ $13 - 6 = 7$

D. $4 \text{ pounds} + 7 \text{ pounds} = 11 \text{ pounds}$

E. $7 \text{ miles} + 7 \text{ miles} = 14 \text{ miles}$

F. $\$25.00 + \$7.00 = \$32.00$

G. Yes, $\$32$ is more than $\$30$.



Page 53 (continued)

H. $\$50 - \$44 = \$6$

I. $15 \text{ toy cars} - 7 \text{ toy cars} = 8 \text{ toy cars}$

J. $14 \text{ pounds} + 12 \text{ pounds} = 26 \text{ pounds}$

K. $\$10 - \$3 = \$7$

Page 54

$9 + 0 = 9$

$9 + 1 = 10$

$9 + 2 = 11$

$9 + 3 = 12$

$0 + 9 = 9$

$1 + 9 = 10$

$2 + 9 = 11$

$3 + 9 = 12$

$9 - 0 = 9$

$10 - 9 = 1$

$11 - 9 = 2$

$12 - 3 = 9$

$9 - 9 = 0$

$10 - 1 = 9$

$11 - 2 = 9$

$12 - 9 = 3$

$9 + 4 = 13$

$9 + 5 = 14$

$9 + 6 = 15$

$9 + 7 = 16$

$4 + 9 = 13$

$5 + 9 = 14$

$6 + 9 = 15$

$7 + 9 = 16$

$13 - 9 = 4$

$14 - 9 = 5$

$15 - 9 = 6$

$16 - 9 = 7$

$13 - 4 = 9$

$14 - 5 = 9$

$15 - 6 = 9$

$16 - 7 = 9$

$9 + 8 = 17$

$9 + 9 = 18$

$9 + 10 = 19$

$8 + 9 = 17$

$18 - 9 = 9$

$10 + 9 = 19$

$17 - 9 = 8$

$19 - 9 = 10$

$17 - 8 = 9$

$19 - 10 = 9$

A. $\$9 - \$9 = \$0$

$\$.09 - \$.00 = \$.09$

B. $9 \text{ cents} + 1 \text{ cent} = 10 \text{ cents}$

$1 \text{ dime} - 1 \text{ cent} = 9 \text{ cents}$

C. $\$12$

$- 9$

$\$ 3$

$\$12,000$

$- 3,000$

$\$ 9,000$

D. $\$1.30$

$- .40$

$\$.90$

$\$1300$

$- 900$

$\$ 400$

E. $\$14.14$

$- 9.05$

$\$ 5.09$

$\$5.09$

$+ 9.05$

$\$14.14$

F. $\$ 906$

$+ 609$

$\$1515$

$\$ 916$

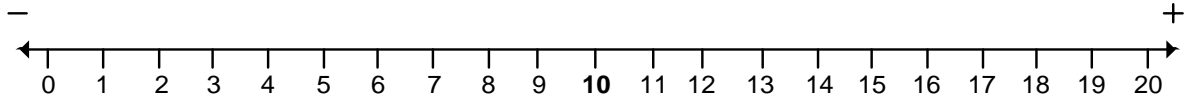
$+ 609$

$\$1525$

G. $\$161,609$

$- 90,708$

$\$ 70,901$



Page 55

A. $9 + 4 = 13$ (One less than 14)

$9 + 7 = 16$ (One less than 17)

B. $14 - 9 = 5$ (One more than 4)

$12 - 9 = 3$ (One more than 2)

C. $10 + 3 = 13$

$16 - 10 = 6$

$9 + 4 = 13$

$9 + 2 = 11$

$9 + 3 = 12$

$16 - 9 = 7$

$6 + 9 = 15$

$10 + 2 = 12$

$9 + 6 = 15$

$13 - 9 = 4$

$11 - 9 = 2$

$9 + 6 = 15$

$8 + 9 = 17$

$17 - 9 = 8$

$11 - 10 = 1$

$10 + 6 = 16$

D. 27 jelly beans + 9 jelly beans = **36 jelly beans**

E. \$17 - \$9 = **\$8**

F. $3 + 3 + 9 = 15$

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A. $6 + 1 = 7$

$7 - 1 = 6$

$5 + 2 = 7$

$7 - 2 = 5$

$4 + 3 = 7$

$7 - 3 = 4$

B. $7 - 1 = 6$

$6 + 1 = 7$

$7 - 2 = 5$

$5 + 2 = 7$

$7 - 3 = 4$

$4 + 3 = 7$

$7 - 4 = 3$

$3 + 4 = 7$

$7 - 5 = 2$

$2 + 5 = 7$

$7 - 6 = 1$

$1 + 6 = 7$

C. $7 + 1 = 8$

$8 - 1 = 7$

$6 + 2 = 8$

$8 - 2 = 6$

$5 + 3 = 8$

$8 - 3 = 5$

$4 + 4 = 8$

$8 - 4 = 4$

D. $8 - 1 = 7$

$7 + 1 = 8$

$8 - 2 = 6$

$6 + 2 = 8$

$8 - 3 = 5$

$5 + 3 = 8$

$8 - 4 = 4$

$4 + 4 = 8$

$8 - 5 = 3$

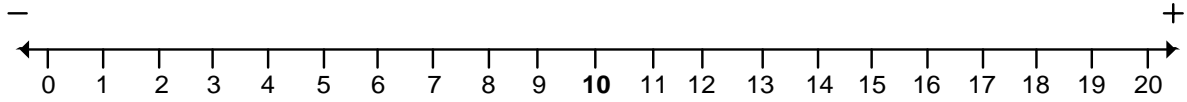
$3 + 5 = 8$

$8 - 6 = 2$

$2 + 6 = 8$

$8 - 7 = 1$

$1 + 7 = 8$



Page 56 (continued)

E. $8 + 1 = 9$	$9 - 1 = 8$
$7 + 2 = 9$	$9 - 2 = 7$
$6 + 3 = 9$	$9 - 3 = 6$
$5 + 4 = 9$	$9 - 4 = 5$
$4 + 5 = 9$	$9 - 5 = 4$

F. $9 - 1 = 8$	$8 + 1 = 9$
$9 - 2 = 7$	$7 + 2 = 9$
$9 - 3 = 6$	$6 + 3 = 9$
$9 - 4 = 5$	$5 + 4 = 9$
$9 - 5 = 4$	$4 + 5 = 9$
$9 - 6 = 3$	$3 + 6 = 9$
$9 - 7 = 2$	$2 + 7 = 9$
$9 - 8 = 1$	$1 + 8 = 9$

Page 57

A. $8 + 7 = 15$	$7 + 9 = 16$
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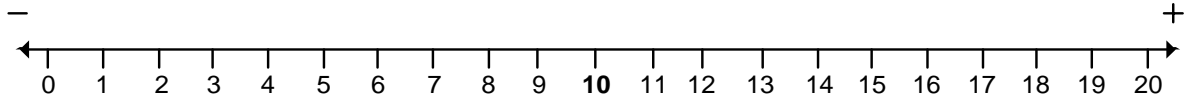
B. $6 + 6 = 12$	$6 + 7 = 13$	$6 + 8 = 14$	$6 + 9 = 15$
$12 - 6 = 6$	$7 + 6 = 13$	$8 + 6 = 14$	$9 + 6 = 15$
$7 + 7 = 14$	$13 - 6 = 7$	$14 - 8 = 6$	$15 - 6 = 9$
$14 - 7 = 7$	$13 - 7 = 6$	$14 - 6 = 8$	$15 - 9 = 6$

C. $7 + 8 = 15$	$7 + 9 = 16$	$8 + 8 = 16$	$8 + 9 = 17$
$8 + 7 = 15$	$9 + 7 = 16$	$16 - 8 = 8$	$9 + 8 = 17$
$15 - 8 = 7$	$16 - 7 = 9$	$9 + 9 = 18$	$17 - 9 = 8$
$15 - 7 = 8$	$16 - 9 = 7$	$18 - 9 = 9$	$17 - 8 = 9$

D. $9 - 5 = 4$	$13 - 7 = 6$	$17 - 7 = 10$	$6 + 7 = 13$
$16 - 7 = 9$	$16 - 9 = 7$	$15 - 7 = 8$	$17 - 9 = 8$
$17 - 8 = 9$	$16 - 10 = 6$	$8 + 7 = 15$	$17 - 6 = 11$
$15 - 8 = 7$	$16 - 8 = 8$	$15 - 6 = 9$	

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A. 14, 8, 6	15, 8, 7	18, 9, 9	13, 5, 8
B. 16, 9, 7	17, 9, 8	16, 9, 7	15, 6, 9
C. 13, 9, 4	16, 8, 8	18, 9, 9	13, 8, 5
D. 17, 9, 8	15, 8, 7	15, 9, 6	14, 8, 6
E. 13, 8, 5	16, 7, 9	17, 9, 8	13, 4, 9
F. 14, 6, 8	13, 9, 4	15, 9, 6	15, 7, 8



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A.

$10 - 1 = 9$	$9 + 1 = 10$
$10 - 2 = 8$	$8 + 2 = 10$
$10 - 3 = 7$	$7 + 3 = 10$
$10 - 4 = 6$	$6 + 4 = 10$
$10 - 5 = 5$	$5 + 5 = 10$
$10 - 6 = 4$	$4 + 6 = 10$
$10 - 7 = 3$	$3 + 7 = 10$
$10 - 8 = 2$	$2 + 8 = 10$
$10 - 9 = 1$	$1 + 9 = 10$

B

$9 + 1 = 10$	$10 - 1 = 9$
$8 + 2 = 10$	$10 - 2 = 8$
$7 + 3 = 10$	$10 - 3 = 7$
$6 + 4 = 10$	$10 - 4 = 6$
$5 + 5 = 10$	$10 - 5 = 5$
$4 + 6 = 10$	$10 - 6 = 4$
$3 + 7 = 10$	$10 - 7 = 3$
$2 + 8 = 10$	$10 - 8 = 2$
$1 + 9 = 10$	$10 - 9 = 1$

C

$4 + 6 = 10$	$10 - 3 = 7$	$8 + 2 = 10$	$10 - 4 = 6$
$10 - 2 = 8$	$10 - 6 = 4$	$10 - 7 = 3$	$8 + 2 = 10$
$10 - 5 = 5$	$10 - 8 = 2$	$7 + 3 = 10$	$10 - 1 = 9$
$10 - 7 = 3$	$10 - 9 = 1$	$5 + 5 = 10$	

D. 10 students - 7 students = 3 students

E. $6 + 4 = 10$

F. $10 - 1 = 9$

G. $\$10 - \$8 = \$2$

H. $\$9 + \$10 = \$19$

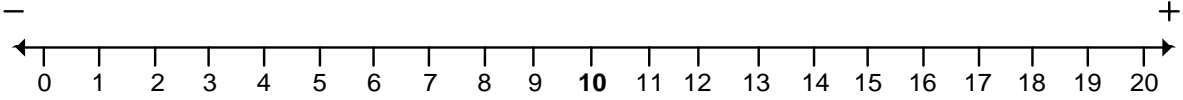
I. $\$17 - \$10 = \$7$

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$$\begin{array}{r} 1 \\ \$.35 \\ .45 \\ + .25 \\ \hline \$1.05 \end{array}$$

$$\begin{array}{r} 1 \\ \$.47 \\ .33 \\ + .38 \\ \hline \$1.18 \end{array}$$

$$\begin{array}{r} 21 \\ \$3.75 \\ 2.35 \\ + 8.91 \\ \hline \$15.01 \end{array}$$



Page 60 (continued)

$$\begin{array}{r} 11\ 1 \\ \$34.78 \\ +\ 9.35 \\ \hline \$\ 44.13 \end{array}$$

$$\begin{array}{r} 1\ 1\ 1 \\ \$40.93 \\ +\ 60.07 \\ \hline \$101.00 \end{array}$$

$$\begin{array}{r} 1 \\ \$53.24 \\ +\ 28.33 \\ \hline \$81.57 \end{array}$$

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$$\begin{array}{r} 1\ 1 \\ 3\ 4\ 5 \\ +\ 2\ 5\ 5 \\ \hline 6\ 0\ 0 \end{array}$$

$$\begin{array}{r} 1\ 1 \\ 8\ 9\ 3 \\ +\ 2\ 1\ 5 \\ \hline 1\ 1\ 0\ 8 \end{array}$$

$$\begin{array}{r} 1 \\ 8\ 2\ 5 \\ +\ 3\ 5 \\ \hline 8\ 6\ 0 \end{array}$$

$$\begin{array}{r} 1\ 1 \\ 7,004 \\ +4,578 \\ \hline 11,582 \end{array}$$

$$\begin{array}{r} 1\ 11 \\ 9,135 \\ +23,176 \\ \hline 32,311 \end{array}$$

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$$\begin{array}{r} \overset{6}{\cancel{7}}\overset{9}{\cancel{1}}\overset{1}{\cancel{0}} \\ A.\ \$\ 7.00 \\ -\ .39 \\ \hline \$\ 6.61 \end{array}$$

$$\begin{array}{r} \overset{5}{\cancel{6}}\overset{9}{\cancel{1}}\overset{1}{\cancel{0}} \\ \$\ 6.00 \\ -\ 3.48 \\ \hline \$\ 2.52 \end{array}$$

$$\begin{array}{r} \overset{8}{\cancel{9}}\overset{9}{\cancel{1}}\overset{1}{\cancel{0}} \\ \$\ 9.00 \\ -\ 4.03 \\ \hline \$\ 4.97 \end{array}$$

$$\begin{array}{r} \overset{2}{\cancel{3}}\overset{9}{\cancel{1}}\overset{9}{\cancel{1}}\overset{1}{\cancel{0}} \\ B.\ \$\ 3.00 \\ -\ 1.84 \\ \hline \$\ 1.16 \end{array}$$

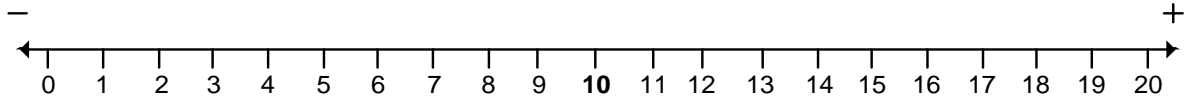
$$\begin{array}{r} \overset{4}{\cancel{5}}\overset{9}{\cancel{1}}\overset{9}{\cancel{1}}\overset{1}{\cancel{0}} \\ \$\ 5.00 \\ -\ 2.75 \\ \hline \$\ 2.25 \end{array}$$

$$\begin{array}{r} \overset{9}{\cancel{1}}\overset{9}{\cancel{1}}\overset{9}{\cancel{1}}\overset{1}{\cancel{0}} \\ \$\ 1.00 \\ -\ 7.52 \\ \hline \$\ 2.48 \end{array}$$

$$\begin{array}{r} 1\ 1\ 1 \\ \$1\ 8.4\ 3 \\ 1\ 1.5\ 7\ + \\ \hline \$3\ 0.0\ 0 \end{array}$$

$$\begin{array}{r} 1\ 1\ 1 \\ \$\ 2.7\ 5 \\ 4\ 7.2\ 5\ + \\ \hline \$5\ 0.0\ 0 \end{array}$$

$$\begin{array}{r} 1\ 1\ 1\ 1 \\ \$\ 7\ 5.2\ 5 \\ 2\ 4.7\ 5\ + \\ \hline \$1\ 0\ 0.0\ 0 \end{array}$$



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A.
$$\begin{array}{r} 5 \overset{0}{\cancel{1}} \overset{4}{\cancel{3}} \overset{1}{\cancel{5}} \overset{1}{\cancel{2}} \\ -4 \\ \hline 1 \end{array}$$

B.
$$\begin{array}{r} 3 \overset{2}{\cancel{1}} \overset{4}{\cancel{0}} \overset{1}{\cancel{5}} \overset{1}{\cancel{2}} \\ -1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \overset{3}{\cancel{1}} \overset{9}{\cancel{0}} \\ - \\ \hline 3 \end{array}$$

$$\begin{array}{r} 5 \overset{2}{\cancel{3}} \overset{9}{\cancel{1}} \\ -2 \\ \hline 3 \end{array}$$

C.
$$\begin{array}{r} 5 \overset{4}{\cancel{1}} \overset{0}{\cancel{1}} \overset{1}{\cancel{3}} \\ -2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 7 \overset{6}{\cancel{1}} \overset{9}{\cancel{0}} \overset{9}{\cancel{1}} \overset{1}{\cancel{3}} \\ - \\ \hline 3 \end{array}$$

$$\begin{array}{r} 4 \overset{3}{\cancel{1}} \overset{2}{\cancel{7}} \overset{9}{\cancel{3}} \overset{1}{\cancel{0}} \overset{1}{\cancel{5}} \\ - \\ \hline 2 \end{array}$$

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A. \$9.95

B. \$0.05

C. Subtract

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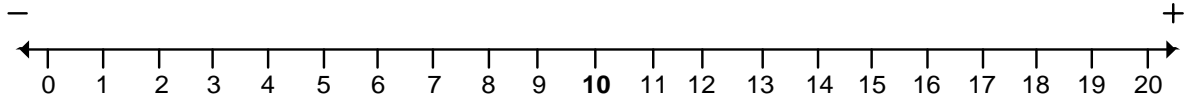
A. 36 40 434

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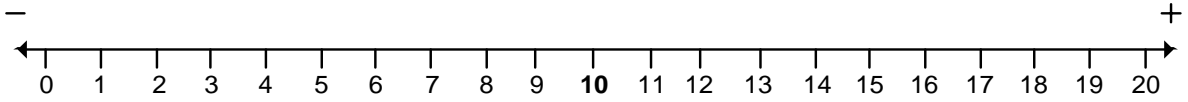
A. Earn money

B. \$131.00

C. Subtract



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Families with a One

[1, 1, 0]

$$1 + 0 = 1$$

$$0 + 1 = 1$$

$$1 - 0 = 1$$

[1, 1, 2]

$$1 + 1 = 2$$

$$2 - 1 = 1$$

[1, 2, 3]

$$1 + 2 = 3$$

$$2 + 1 = 3$$

$$3 - 1 = 2$$

$$3 - 2 = 1$$

[1, 3, 4]

$$1 + 3 = 4$$

$$3 + 1 = 3$$

$$4 - 1 = 3$$

$$4 - 3 = 1$$

[1, 4, 5]

$$1 + 4 = 5$$

$$4 + 1 = 5$$

$$5 - 1 = 4$$

$$5 - 4 = 1$$

[1, 5, 6]

$$1 + 5 = 6$$

$$5 + 1 = 6$$

$$6 - 1 = 5$$

$$6 - 5 = 1$$

[1, 6, 7]

$$1 + 6 = 7$$

$$6 + 1 = 7$$

$$7 - 1 = 6$$

$$7 - 6 = 1$$

[1, 7, 8]

$$1 + 7 = 8$$

$$7 + 1 = 8$$

$$8 - 1 = 7$$

$$8 - 7 = 1$$

[1, 8, 9]

$$1 + 8 = 9$$

$$8 + 1 = 9$$

$$9 - 1 = 8$$

$$9 - 8 = 1$$

[1, 9, 10]

$$1 + 9 = 10$$

$$9 + 1 = 10$$

$$10 - 1 = 9$$

$$10 - 9 = 1$$

[1, 10, 11]

$$1 + 10 = 11$$

$$10 + 1 = 11$$

$$11 - 1 = 10$$

$$11 - 10 = 1$$

Families with a Ten

[10, 0, 10]

$$10 + 0 = 10$$

$$0 + 10 = 10$$

$$10 - 0 = 10$$

[10, 1, 11]

$$10 + 1 = 11$$

$$11 - 10 = 1$$

[10, 2, 12]

$$10 + 2 = 12$$

$$2 + 10 = 12$$

$$12 - 10 = 2$$

$$12 - 2 = 10$$

[10, 3, 13]

$$10 + 3 = 13$$

$$3 + 10 = 13$$

$$13 - 10 = 3$$

$$13 - 3 = 10$$

[10, 4, 14]

$$10 + 4 = 14$$

$$4 + 10 = 14$$

$$14 - 10 = 4$$

$$14 - 4 = 10$$

[10, 5, 15]

$$10 + 5 = 15$$

$$5 + 10 = 15$$

$$15 - 10 = 5$$

$$15 - 5 = 10$$

[10, 6, 16]

$$10 + 6 = 16$$

$$6 + 10 = 16$$

$$16 - 10 = 6$$

$$16 - 6 = 10$$

[10, 7, 17]

$$10 + 7 = 17$$

$$7 + 10 = 17$$

$$17 - 10 = 7$$

$$17 - 7 = 10$$

[10, 8, 18]

$$10 + 8 = 18$$

$$8 + 10 = 18$$

$$18 - 10 = 8$$

$$18 - 8 = 10$$

[10, 9, 19]

$$10 + 9 = 19$$

$$9 + 10 = 19$$

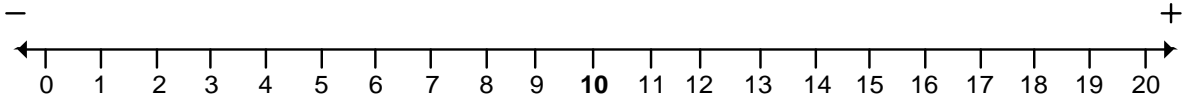
$$19 - 10 = 9$$

$$19 - 9 = 10$$

[10, 10, 20]

$$10 + 10 = 20$$

$$20 - 10 = 10$$



Families with a Two

[2, 0, 2]

$$2 + 0 = 2$$

$$0 + 2 = 2$$

$$2 - 0 = 2$$

[2, 1, 3]

$$2 + 1 = 3$$

$$1 + 2 = 3$$

$$3 - 1 = 2$$

$$3 - 2 = 1$$

[2, 2, 4]

$$2 + 2 = 4$$

$$4 - 2 = 2$$

[2, 3, 5]

$$2 + 3 = 5$$

$$3 + 2 = 5$$

$$5 - 2 = 3$$

$$5 - 3 = 2$$

[2, 4, 6]

$$2 + 4 = 6$$

$$4 + 2 = 6$$

$$6 - 2 = 4$$

$$6 - 4 = 2$$

[2, 5, 7]

$$2 + 5 = 7$$

$$5 + 2 = 7$$

$$7 - 2 = 5$$

$$7 - 5 = 2$$

[2, 6, 8]

$$2 + 6 = 8$$

$$6 + 2 = 8$$

$$8 - 2 = 6$$

$$8 - 6 = 2$$

[2, 7, 9]

$$2 + 7 = 9$$

$$7 + 2 = 9$$

$$9 - 2 = 7$$

$$9 - 7 = 2$$

[2, 8, 10]

$$2 + 8 = 10$$

$$8 + 2 = 10$$

$$10 - 2 = 8$$

$$10 - 8 = 2$$

[2, 9, 11]

$$2 + 9 = 11$$

$$9 + 2 = 11$$

$$11 - 2 = 9$$

$$11 - 9 = 2$$

[2, 10, 12]

$$2 + 10 = 12$$

$$10 + 2 = 12$$

$$12 - 2 = 10$$

$$12 - 10 = 2$$

Families with a Three

[3, 0, 3]

$$3 + 0 = 3$$

$$0 + 3 = 3$$

$$3 - 0 = 3$$

[3, 1, 4]

$$3 + 1 = 4$$

$$1 + 3 = 4$$

$$4 - 1 = 3$$

$$4 - 3 = 1$$

[3, 2, 5]

$$3 + 2 = 5$$

$$2 + 3 = 5$$

$$5 - 2 = 3$$

$$5 - 3 = 2$$

[3, 3, 6]

$$3 + 3 = 6$$

$$6 - 3 = 3$$

[3, 4, 7]

$$3 + 4 = 7$$

$$4 + 3 = 7$$

$$7 - 3 = 4$$

$$7 - 4 = 3$$

[3, 5, 8]

$$3 + 5 = 8$$

$$5 + 3 = 8$$

$$8 - 3 = 5$$

$$8 - 5 = 3$$

[3, 6, 9]

$$3 + 6 = 9$$

$$6 + 3 = 9$$

$$9 - 3 = 6$$

$$9 - 6 = 3$$

[3, 7, 10]

$$3 + 7 = 10$$

$$7 + 3 = 10$$

$$10 - 3 = 7$$

$$10 - 7 = 3$$

[3, 8, 11]

$$3 + 8 = 11$$

$$8 + 3 = 11$$

$$11 - 3 = 8$$

$$11 - 8 = 3$$

[3, 9, 12]

$$3 + 9 = 12$$

$$9 + 3 = 12$$

$$12 - 3 = 9$$

$$12 - 9 = 3$$

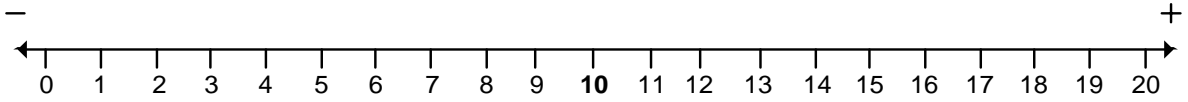
[3, 10, 13]

$$3 + 10 = 13$$

$$10 + 3 = 13$$

$$13 - 3 = 10$$

$$13 - 10 = 3$$



Families with a Four

[4, 0, 4]

$$4 + 0 = 4$$

$$0 + 4 = 4$$

$$4 - 0 = 4$$

[4, 1, 5]

$$4 + 1 = 5$$

$$1 + 4 = 5$$

$$5 - 1 = 4$$

$$5 - 4 = 1$$

[4, 2, 6]

$$4 + 2 = 6$$

$$2 + 4 = 6$$

$$6 - 4 = 2$$

$$6 - 2 = 4$$

[4, 3, 7]

$$4 + 3 = 7$$

$$3 + 4 = 7$$

$$7 - 4 = 3$$

$$7 - 3 = 4$$

[4, 4, 8]

$$4 + 4 = 8$$

$$8 - 4 = 4$$

[4, 5, 9]

$$4 + 5 = 9$$

$$5 + 4 = 9$$

$$9 - 4 = 5$$

$$9 - 5 = 4$$

[4, 6, 10]

$$4 + 6 = 10$$

$$6 + 4 = 10$$

$$10 - 4 = 6$$

$$10 - 6 = 4$$

[4, 7, 11]

$$4 + 7 = 11$$

$$7 + 4 = 9$$

$$11 - 4 = 7$$

$$11 - 7 = 4$$

[4, 8, 12]

$$4 + 8 = 12$$

$$8 + 4 = 12$$

$$12 - 4 = 8$$

$$12 - 8 = 4$$

[4, 9, 13]

$$4 + 9 = 13$$

$$9 + 4 = 13$$

$$13 - 4 = 9$$

$$13 - 9 = 4$$

[4, 10, 14]

$$4 + 10 = 14$$

$$10 + 4 = 14$$

$$14 - 4 = 10$$

$$14 - 10 = 4$$

[4, 11, 15]

$$4 + 11 = 15$$

$$11 + 4 = 15$$

$$15 - 4 = 11$$

$$15 - 11 = 4$$

Families with a Five

[5, 0, 5]

$$5 + 0 = 5$$

$$0 + 5 = 5$$

$$5 - 0 = 5$$

[5, 1, 6]

$$5 + 1 = 6$$

$$1 + 5 = 6$$

$$6 - 1 = 5$$

$$6 - 5 = 1$$

[5, 2, 7]

$$5 + 2 = 7$$

$$2 + 5 = 7$$

$$7 - 5 = 2$$

$$7 - 2 = 5$$

[5, 3, 8]

$$5 + 3 = 8$$

$$3 + 5 = 8$$

$$8 - 5 = 3$$

$$8 - 3 = 5$$

[5, 4, 9]

$$5 + 4 = 9$$

$$4 + 5 = 9$$

$$9 - 5 = 4$$

$$9 - 4 = 5$$

[5, 5, 10]

$$5 + 5 = 10$$

$$10 - 5 = 5$$

[5, 6, 11]

$$5 + 6 = 11$$

$$6 + 5 = 11$$

$$11 - 5 = 6$$

$$11 - 6 = 5$$

[5, 7, 12]

$$5 + 7 = 12$$

$$7 + 5 = 12$$

$$12 - 5 = 7$$

$$12 - 7 = 5$$

[5, 8, 13]

$$5 + 8 = 13$$

$$8 + 5 = 13$$

$$13 - 5 = 8$$

$$13 - 8 = 5$$

[5, 9, 14]

$$5 + 9 = 14$$

$$9 + 5 = 14$$

$$14 - 5 = 9$$

$$14 - 9 = 5$$

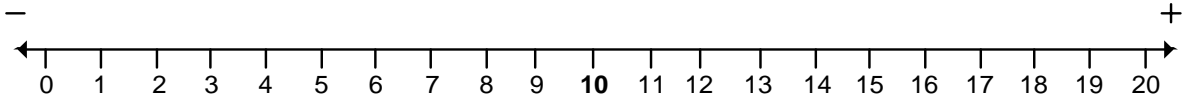
[5, 10, 15]

$$5 + 10 = 15$$

$$10 + 5 = 15$$

$$15 - 5 = 10$$

$$15 - 10 = 5$$



Families with a Six

[6, 0, 6]

$$6 + 0 = 6$$

$$0 + 6 = 6$$

$$6 - 0 = 6$$

[6, 1, 7]

$$6 + 1 = 7$$

$$1 + 6 = 7$$

$$7 - 1 = 6$$

$$7 - 6 = 1$$

[6, 2, 8]

$$6 + 2 = 8$$

$$2 + 6 = 8$$

$$8 - 6 = 2$$

$$8 - 2 = 6$$

[6, 3, 9]

$$6 + 3 = 9$$

$$3 + 6 = 9$$

$$9 - 6 = 3$$

$$9 - 3 = 6$$

[6, 4, 10]

$$6 + 4 = 10$$

$$4 + 6 = 10$$

$$10 - 6 = 4$$

$$10 - 4 = 6$$

[6, 5, 11]

$$6 + 5 = 11$$

$$5 + 6 = 11$$

$$11 - 6 = 5$$

$$11 - 5 = 6$$

[6, 6, 12]

$$6 + 6 = 12$$

$$12 - 6 = 6$$

[6, 7, 13]

$$6 + 7 = 13$$

$$7 + 6 = 13$$

$$13 - 6 = 7$$

$$13 - 7 = 6$$

[6, 8, 14]

$$6 + 8 = 14$$

$$8 + 6 = 14$$

$$14 - 6 = 8$$

$$14 - 8 = 6$$

[6, 9, 15]

$$6 + 9 = 15$$

$$9 + 6 = 15$$

$$15 - 6 = 9$$

$$15 - 9 = 6$$

[6, 10, 16]

$$6 + 10 = 16$$

$$10 + 6 = 16$$

$$16 - 6 = 10$$

$$16 - 10 = 6$$

Families with a Seven

[7, 0, 7]

$$7 + 0 = 7$$

$$0 + 7 = 7$$

$$7 - 0 = 7$$

[7, 1, 8]

$$7 + 1 = 8$$

$$1 + 7 = 8$$

$$8 - 1 = 7$$

$$8 - 7 = 1$$

[7, 2, 9]

$$7 + 2 = 9$$

$$2 + 7 = 9$$

$$9 - 7 = 2$$

$$9 - 2 = 7$$

[7, 3, 10]

$$7 + 3 = 10$$

$$3 + 7 = 10$$

$$10 - 7 = 3$$

$$10 - 3 = 7$$

[7, 4, 11]

$$7 + 4 = 11$$

$$4 + 7 = 11$$

$$11 - 7 = 4$$

$$11 - 4 = 7$$

[7, 5, 12]

$$7 + 5 = 12$$

$$5 + 7 = 12$$

$$12 - 7 = 5$$

$$12 - 5 = 7$$

[7, 6, 13]

$$7 + 6 = 13$$

$$6 + 7 = 13$$

$$13 - 6 = 7$$

$$13 - 7 = 6$$

[7, 7, 14]

$$7 + 7 = 14$$

$$14 - 7 = 7$$

[7, 8, 15]

$$7 + 8 = 15$$

$$8 + 7 = 15$$

$$15 - 7 = 8$$

$$15 - 8 = 7$$

[7, 9, 16]

$$7 + 9 = 16$$

$$9 + 7 = 16$$

$$16 - 7 = 9$$

$$16 - 9 = 7$$

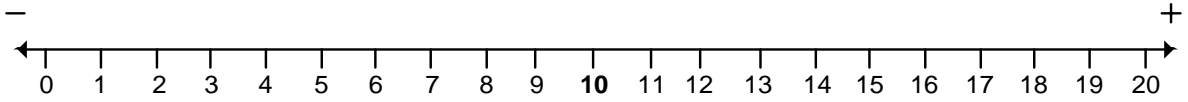
[7, 10, 17]

$$7 + 10 = 17$$

$$10 + 7 = 17$$

$$17 - 7 = 10$$

$$17 - 10 = 7$$



Families with an Eight

[8, 0, 8]

$$8 + 0 = 8$$

$$0 + 8 = 8$$

$$8 - 0 = 8$$

[8, 1, 9]

$$8 + 1 = 9$$

$$1 + 8 = 9$$

$$9 - 1 = 8$$

$$9 - 8 = 1$$

[8, 2, 10]

$$8 + 2 = 10$$

$$2 + 8 = 10$$

$$10 - 8 = 2$$

$$10 - 2 = 8$$

[8, 3, 11]

$$8 + 3 = 11$$

$$3 + 8 = 11$$

$$11 - 8 = 3$$

$$11 - 3 = 8$$

[8, 4, 12]

$$8 + 4 = 12$$

$$4 + 8 = 12$$

$$12 - 8 = 4$$

$$12 - 4 = 8$$

[8, 5, 13]

$$8 + 5 = 13$$

$$5 + 8 = 13$$

$$13 - 8 = 5$$

$$13 - 5 = 8$$

[8, 6, 14]

$$8 + 6 = 14$$

$$6 + 8 = 14$$

$$14 - 6 = 8$$

$$14 - 8 = 6$$

[8, 7, 15]

$$8 + 7 = 15$$

$$7 + 8 = 15$$

$$15 - 8 = 7$$

$$15 - 7 = 8$$

[8, 8, 16]

$$8 + 8 = 16$$

$$16 - 8 = 8$$

[8, 9, 17]

$$8 + 9 = 17$$

$$9 + 8 = 17$$

$$17 - 8 = 9$$

$$17 - 9 = 8$$

[8, 10, 18]

$$8 + 10 = 18$$

$$10 + 8 = 18$$

$$18 - 8 = 10$$

$$18 - 10 = 8$$

Families with a Nine

[9, 0, 9]

$$9 + 0 = 9$$

$$0 + 9 = 9$$

$$9 - 0 = 9$$

[9, 1, 10]

$$9 + 1 = 10$$

$$1 + 9 = 10$$

$$10 - 1 = 9$$

$$10 - 9 = 1$$

[9, 2, 11]

$$9 + 2 = 11$$

$$2 + 9 = 11$$

$$11 - 9 = 2$$

$$11 - 2 = 9$$

[9, 3, 12]

$$9 + 3 = 12$$

$$3 + 9 = 12$$

$$12 - 9 = 3$$

$$12 - 3 = 9$$

[9, 4, 13]

$$9 + 4 = 13$$

$$4 + 9 = 13$$

$$13 - 9 = 4$$

$$13 - 4 = 9$$

[9, 5, 14]

$$9 + 5 = 14$$

$$5 + 9 = 14$$

$$14 - 9 = 5$$

$$14 - 5 = 9$$

[9, 6, 15]

$$9 + 6 = 15$$

$$6 + 9 = 15$$

$$15 - 6 = 9$$

$$15 - 9 = 6$$

[9, 7, 16]

$$9 + 7 = 16$$

$$7 + 9 = 16$$

$$16 - 9 = 7$$

$$16 - 7 = 9$$

[9, 8, 17]

$$9 + 8 = 17$$

$$8 + 9 = 17$$

$$17 - 9 = 8$$

$$17 - 8 = 9$$

[9, 9, 18]

$$9 + 9 = 18$$

$$18 - 9 = 9$$

[9, 10, 19]

$$9 + 10 = 19$$

$$10 + 9 = 19$$

$$19 - 9 = 10$$

$$19 - 10 = 9$$