

Name: \_\_\_\_\_

# Who Invented UPC Bar Codes?

By Cindy Grigg

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When you go into almost any store, you will probably hear, "beep, beep, beep." It is the sound of the computerized cash register reading the UPC codes on purchases. UPC is short for Universal Product Code. These are the set of black bars and spaces found on nearly every product. These UPCs make it much easier for stores to keep track of the products they sell and have available to customers.

Before UPCs, every item had its own price tag. Cashiers keyed in each price by hand into a cash register.

In 1948, Bernard Silver was a grad student at Drexel Institute of Technology in Philadelphia. He heard a supermarket manager ask the school's dean for a way to keep track of store inventories. The manager asked the school to find a way to capture data mechanically during checkout. If the products sold could be recorded automatically during checkout, managers could know when they needed to order more goods. The dean turned down the request.

Silver told his friend Joseph Woodland. They both thought the idea was a good one. They decided to work on the problem.

Woodland thought of the dots and dashes used in Morse code. He lived in Florida and often went to the beach to think. One day he used a stick to draw Morse code dots and dashes in the sand. He used his fingers to pull down the sand under the dots. He saw thin lines in the sand. When he pulled down the sand under the dashes, thick lines were made. This gave him the idea of a two-dimensional kind of Morse code. He told Bernard Silver. They created a system of symbols with line patterns to identify products.

To read the data, they used technology from movie soundtracks. The result was the bar code scanner. Bernard Silver and Joseph Woodland were granted a patent in October 1952 for their "classifying apparatus and method." Their first UPCs were like bull's eyes. Thick and thin lines made a series of circles inside a bigger circle.

Still, there were problems. Silver and Woodland's first bar code reader was the size of a desk. It used a 500 watt light bulb as the light source. It used a movie sound system tube as the reader. The device had to be wrapped in black oilcloth to keep daylight out of the reader. The heat from the bulb caused the oilcloth to almost catch on fire. It took ten more years for the technology needed to make the system work.

In the 1960s, cheap lasers using only a half-watt replaced the 500 watt light bulb in the scanner. Microchips made computers smaller and cheaper. Then the codes had to be standardized. The first UPCs were circles, called bull's-eyes. These codes didn't always scan correctly. Woodland worked with IBM to develop the Universal Product Code (UPC). He kept his original idea, designed in the sand, of bars of thin and thick lines to represent numbers. Putting the bars inside a white rectangle made them easier for a scanner to read. Even if printing presses smeared the ink, a rectangular UPC was still able to be read by a scanner when the bull's-eye code could not. Then companies had to agree to use the same code numbers for products. A Uniform Code Council keeps track of all code numbers.

George Laurer, who worked at IBM with Woodland, is often credited with the invention of the twelve-digit pattern for Universal Product Codes. Twelve-digit UPCs are split into two halves. Each half has six digits. The first number is zero, except for products like meat and produce that have variable weights. The next five numbers are the manufacturer code. The first five digits in the second half are the product code. These numbers identify the individual product. The last digit is a "check code" used to insure that the other numbers scanned correctly.

How does a UPC work? At the grocery store, the cashier runs each item across a scanner. You may be able to see the red light inside the scanner. The scanner beeps as it "reads" each bar code. The different bar patterns represent the digits from 0 to 9. The computer reads the patterns. It matches the series of numbers to one in its database. Then it finds the matching price for the item. The register automatically rings up that exact product and price. The price appears in the digital display at the checkout counter.



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The first grocery product to bear a bar code was a package of Wrigley's chewing gum in 1974. Today it's hard to imagine buying anything without a UPC. Libraries, delivery companies, railroads, hospitals, and the U.S. Army all use UPC codes.

Bernard Silver died in a car accident in 1963. Silver and Woodland's patent ran out in 1969, before their idea reached its potential. Woodland never got rich from his ideas, but he was awarded the National Medal of Technology in 1992 by the President of the United States. It took twenty years for the idea to come to fruition, but now UPCs are used billions of times every day.

Who Invented UPC Bar Codes?

## Questions

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\_\_\_\_\_ 1. Silver and Woodland's first bar code reader \_\_\_\_\_.

- A. used a 500 watt light bulb
- B. was the size of a desk
- C. almost caught on fire
- D. all of the above

\_\_\_\_\_ 2. Bernard Silver went on to win many awards for his invention.

- A. true
- B. false

\_\_\_\_\_ 3. The first barcode scanner was an instant success.

- A. false
- B. true

4. What were the first UPCs like?

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\_\_\_\_\_ 5. The invention of the twelve-digit pattern for Universal Product Codes is credited to \_\_\_\_\_.

- A. Bernard Silver
- B. Joseph Woodland
- C. George Laurer
- D. all of the above

6. What was the 500 watt light bulb replaced with?

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\_\_\_\_\_ 7. The first half of a UPC has five numbers that identify the \_\_\_\_\_.

- A. product
- B. manufacturer
- C. check code
- D. all of the above

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\_\_\_\_\_ 8. The second half of a UPC has five numbers that \_\_\_\_\_.

- A. identify the individual product
- B. identify the manufacturer
- C. check code
- D. all of the above

Rewrite  $13 - 6$

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

$$7 - 12 =$$

Rewrite  $11 + -9$

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

How many meters are there in 85 kilometers?

How much money is 1 quarter, 7 dimes, 1 nickel, and 1 penny?

What is 50% of 1,540?

Round 79,464 to the nearest hundred.

How many centimeters in 4.6 meters?

$$3 + 48 \div 12$$

What 6 coins add up to 72 cents?

Know how many inches in a foot? Okay, smarty pants, how many inches in 8 feet?

How much time is it from 8:00 a.m. to 10:20 a.m.?

$$9 \div \frac{1}{3}$$

It was 4 degrees below zero in the morning. By afternoon the temperature rose 17 degrees. How warm was it?

$$32 + n = 45$$

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Add one set of parenthesis to each equation so that the equation is true.

$$(5 \times 2) + 9 = 19$$

$$11 + (6 \div 6) = 12$$

$$8 \times 4 + 4 = 36$$

$$8 \times 4 + 4 = 64$$

$$3 + 10 \times 12 - 9 = 33$$

$$3 + 10 \times 12 - 9 = 147$$

$$2 + 2 + 2 - 4 = 2$$

$$7 \div 7 + 8 \times 12 = 97$$

$$6 + 7 \times 6 - 7 = 71$$

$$1 + 1 \times 12 - 12 = 1$$

$$7 \div 7 + 1 \times 12 = 13$$

$$1 + 9 \times 9 + 8 = 154$$

$$10 \times 1 + 11 + 1 = 121$$

$$4 + 2 + 2 - 2 = 6$$

$$10 \div 10 + 11 + 2 = 14$$

$$8 \times 4 + 3 \div 3 = 33$$

$$9 + 12 + 4 \times 4 = 37$$

$$4 + 2 + 6 \times 12 = 78$$

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$$\begin{array}{r} 335 \\ + 95 \\ \hline \end{array}$$

$$\begin{array}{r} 891 \\ - 14 \\ \hline \end{array}$$

$$\begin{array}{r} 979 \\ - 954 \\ \hline \end{array}$$

$$12 + \frac{1}{4} - \frac{2}{7} =$$

Reduce  $\frac{6}{15}$  to its lowest terms.

$$9 - \frac{2}{7} - \frac{1}{4} =$$

$$\begin{array}{r} 78.8 \\ \times 7.35 \\ \hline \end{array}$$

$$100 \times 7.5 =$$

$$\begin{array}{r} 9.29 \\ \times 3.9 \\ \hline \end{array}$$

$$0.03 \overline{) 0.0111}$$

Convert to a fraction or mixed number and simplify.

$$0.03146 =$$

$$66.0006 =$$

$$2.31415 =$$

$$38.00127 =$$

$$0.016 =$$

$$6.00821 =$$

$$1.9 \overline{) 2.09}$$

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Ms. White is planning a trip to the Museum of History on the date of Thailand's New Year. A total of 132 students are going on the trip. Each bus will hold 36 students. How many buses will be needed?

According to a survey, 82% of adults in the United States pray at least once a week. Out of a group of 7,500 adults, approximately how many pray at least once a week?

If you take the first number and subtract it by the second, the difference is 10.

What are the two numbers?

Rewrite this mixed number as an improper fraction.

$$7 \frac{3}{4}$$

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There are 3 prime numbers greater than 39 but less than 49. Name them.

Round the decimal 0.565 to the nearest hundredth.

How many centimeters in 730.9 meters?

6, 8, 10, 12, \_\_\_\_\_, 16,  
18

(243), (81), (27),  
(9), \_\_\_\_\_, (1),  $\frac{1}{3}$ ,  
 $\frac{1}{9}$

$11 \div \frac{1}{3}$

$1 + 100 \div 10$

How many pounds are in 64 ounces?

\_\_\_\_\_ pounds

Erin rolls a die. What is the chance of her rolling a 1?

\_\_\_\_\_

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Circle all of the numbers that are less than 6.8.

$\frac{32}{5}$

$\frac{27}{4}$

$6\frac{4}{7}$

$\frac{120}{18}$

$\frac{13}{2}$

$\frac{38}{6}$

$\frac{44}{6}$

$\frac{34}{5}$

$\frac{216}{32}$

$6\frac{4}{5}$

$\frac{20}{3}$

$\frac{9}{2}$

6.110

6.0160

6.16

6.015

$$\begin{array}{r} 13.1 \\ - 8.2 \\ \hline \end{array}$$

$17.7 - 4.39 =$

$0.38 + 5.8 + 0.5 =$

It was 8 degrees below zero in the morning. By afternoon the temperature rose 24 degrees. How warm was it?

Round 64,574 to the nearest hundred.

It was 9 degrees above zero in the morning. By afternoon the temperature rose 21 degrees. How warm was it?

$24 \div 6 = \underline{\hspace{2cm}}$



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# Peer Mediation

By Jennifer Kenny

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Life is filled with good things. Life is filled with problems, too. Every day people try to come up with ways to solve problems. Kids in school need to find ways, too. They are no exception.

For as long as there have been schools, there have been difficulties between children. This can include name-calling, the taking of someone else's property, or even pushing on the playground. Many times adults intervene - maybe a teacher, a parent, the principal, or a lunchroom monitor. This is important in the sense that most schools have zero tolerance for bullying, or one student harming another in any way - physically or verbally. However, a grown up stepping in sometimes only helps temporarily. That's where a program called peer mediation comes in.



Peer mediation sounds like a complicated term. However, it's not so complicated when it's broken down. A peer is someone your own age. A mediator is someone who helps fix conflicts.

What exactly does a peer mediator do? A peer mediator is usually chosen in a school situation because of the person's helpful nature. The peer mediator may be very academic or not, be very athletic or not, be very popular or not, etc. The peer mediator is trained by an adult in many schools through role playing. He or she learns about conflict resolution by thinking up different ways to solve problems. After training, the peer mediator uses his or her skills in real-life school situations.

The way the peer mediation program works may be slightly different in each school. In general, if a child is having a problem with another child, he or she may fill out a form requesting a time for someone to listen. This is **CONFIDENTIAL**, so the whole school does not find out about it.

A time is set up for a few mediators to meet with the two or more people involved in the conflict. An adult is also present to supervise. There are ground rules that all must follow. Everyone must agree they will try to solve the problem so everyone must be respectful with no interrupting. Everyone must be responsible to tell the truth and carry out any agreement.

The peer mediators guide the process. However, they are not judges. They need to stay neutral, or not take sides. The peer mediators can't tell the children what to do, look for witnesses, or accuse. Instead, they try to get the children involved to work it out. They attempt to get each side to listen carefully and be fair.

At the end, the two sides hopefully agree to work it out. The peer mediators paraphrase what they heard, and a written contract is signed which states what each party will do to help make peace. The peer mediators keep the information confidential. They also check in later to see if the problem has de-escalated, or gotten any better. Hopefully, it has, and the program has worked because the two sides agreed, with the help of peers, to solve something together.

Peer mediation can be used for fighting, rumors, threats, pushing, teasing, or even friendship issues. The problem may have occurred in the hallway, on the playground, in the cafeteria, on the bus, or even the classroom. All kinds of solutions may be developed as long as both sides agree to them.

Name-calling, for example, can be a real problem. Both sides may have part of the solution. The person who did the name-calling may need to come up with a more positive way to speak. The person who was called a mean name may need to learn to speak up or ignore the name-calling. When someone's property, like a book or pencil, has been taken, it may be resolved by teaching the "taker" to ask next time to share and return. It might also be suggested to the other child to label things or put things in a safer place.

The list goes on and on. Rumors can be stopped or corrected. Someone who feels bossed around may work on sensitivity; the other child might work on more positive ways of asking if others need help.

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Friendship issues are big ones. Even friends can have issues. Through peer mediation, friends can work out problems and learn to express feelings while showing care and consideration.

Peer mediation helps kids come up with solutions to their problems using what they have - each other. In a safe, nonjudgmental way, issues can be discussed and worked out, bringing peace to an already complicated childhood.

Peer Mediation

## Questions

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- \_\_\_\_\_ 1. Which word means someone your own age?
- A. neutral
  - B. peer
  - C. teacher
  - D. mediation
- \_\_\_\_\_ 2. Who is someone who helps fix conflicts?
- A. neutral
  - B. fighter
  - C. mediator
  - D. peer
- \_\_\_\_\_ 3. A peer mediation session should be a public display in front of all classmates.
- A. True
  - B. False
- \_\_\_\_\_ 4. Which problem would NOT be handled in a peer mediation session?
- A. what color dress to wear
  - B. rumors
  - C. teasing
  - D. name-calling
- \_\_\_\_\_ 5. The job of the peer mediator is to seek witnesses.
- A. False
  - B. True
- \_\_\_\_\_ 6. Peer mediators need to \_\_\_\_\_.
- A. talk throughout the process
  - B. accuse
  - C. tell the students what you do
  - D. stay neutral
- \_\_\_\_\_ 7. Both sides need to \_\_\_\_\_ at the end of the session in order for the process to work.
- A. yell
  - B. fight
  - C. cry
  - D. agree

13 kg = _____ g
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Name: \_\_\_\_\_

During an electronics experiment in your laboratory, you measure the voltage at terminal A on your newly designed circuit. You measure -15 volts. You check the same terminal after making a small change to the circuit, and this time you measure -20 volts. What was the voltage difference between the two readings?

Let's say you have a molecule that is made entirely out of four different kinds of subunits called As, Ts, Cs, and Gs. In this molecule, the number of Cs equals the number of Gs and the number of Ts equals the number of As. If one of these molecules is analyzed and found to consist of 26% As, then what percent of the molecule is made up of Gs?

Megan whined, "I don't understand all this technical stuff. The instructions say I should compress my files. How do I do that?" The instruction manual that came with the software had very clear instructions, but Megan liked being contrary, so she never read instructions. The software will compress a file to one-eighth of its uncompressed size. If it is used to compress a file of 289,668 bytes, how many bytes will the new file take up?

It was a very freaky weather day. The temperature started out at  $10^{\circ}\text{C}$  in the morning and went to  $-14^{\circ}\text{C}$  at noon. It stayed at that temperature for eight hours and then rose  $7^{\circ}\text{C}$ . How far below the freezing point ( $0^{\circ}\text{C}$ ) was the temperature at 8 p.m.?

You are presented with a gold plated hula-hoop. The presenter tells you that it is worth about \$59.74 per inch of length. If the diameter of the hula-hoop is twenty-six inches, how much is it worth?

Mr. Snead makes \$30,800 a year. His boss, Ms. Tong just gave him a raise. Now he makes \$33,000 a year. His salary has increased by what percent? Round your answer to the nearest tenth of a percent.

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This puzzle has a large number in the middle, which is the sum of the four numbers that surround it.

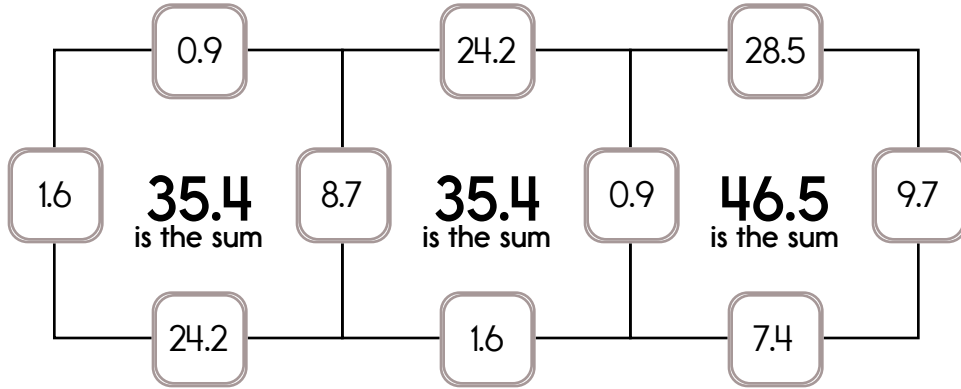
Example:

$$1.6 + 8.7 + 0.9 + 24.2 = 35.4$$

Example:

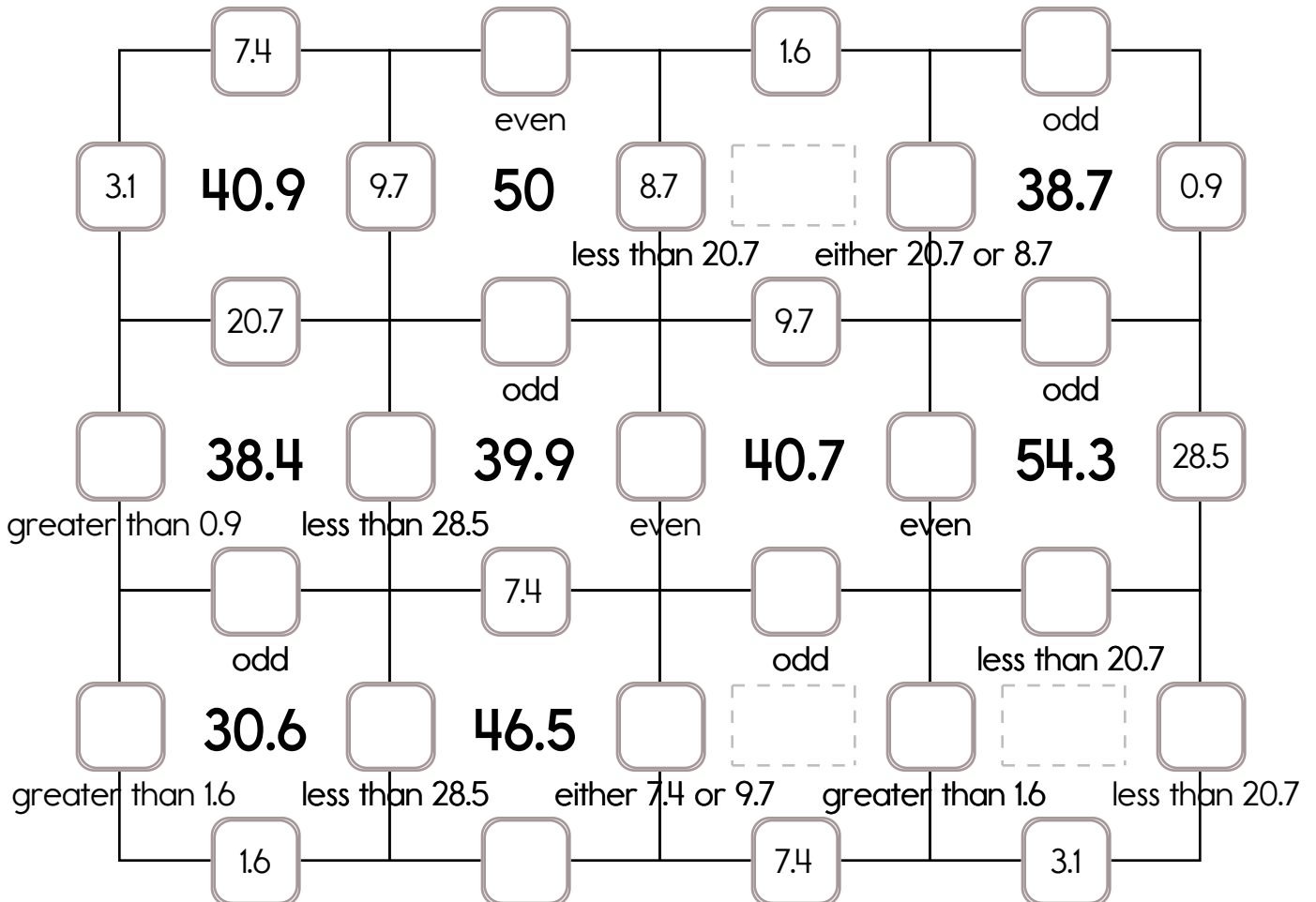
$$0.9 + 9.7 + 28.5 + 7.4 = 46.5$$

Sample:



Fill in the missing numbers. How? The sum of the four surrounding numbers is in the center of each square. Exactly one of the four numbers has to be one of these numbers: 28.5, 24.2, or 20.7.

The other three numbers have to all be DIFFERENT and must be from these: 8.7, 9.7, 1.6, 3.1, 7.4, or 0.9.



Name: \_\_\_\_\_

Fill in the missing numbers. How? The sum of the four surrounding numbers is in the center of each square. Exactly one of the four numbers has to be one of these numbers: 18.2, 13.7, or 12.6. The other three numbers have to all be DIFFERENT and must be from these: 9.2, 6.8, 5.1, 1.4, 0.7, 8.2, or 7.8.

	8.2		5.1		7.8		5.1	
1.4	<b>31.1</b>	7.8	<b>40.3</b>	18.2	<b>33.5</b>			
	13.7		9.2		6.8			
			less than 18.2				even	greater than 1.4
	<b>27.3</b>		<b>29.4</b>		<b>27.1</b>		<b>39.3</b>	
less than 8.2		either 5.1 or 12.6		odd		greater than 1.4		odd
	even		less than 18.2		either 0.7 or 9.2		odd	
	<b>29.5</b>		<b>32.5</b>		<b>23.9</b>		<b>35.1</b>	
either 18.2 or 12.6		odd		odd		even		odd
	greater than 5.1		even		greater than 0.7		less than 13.7	
	<b>36.6</b>		<b>36.3</b>		<b>35.6</b>		<b>29</b>	
odd		even		either 8.2 or 9.2				even
	either 7.8 or 9.2		even		either 7.8 or 18.2		greater than 0.7	
	<b>37.9</b>		<b>36.3</b>					
even		greater than 5.1				odd		
	odd		either 8.2 or 7.8		less than 12.6		less than 9.2	

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$$\begin{array}{r} 486 \\ - 328 \\ \hline \end{array}$$

$$\begin{array}{r} 697 \\ - 113 \\ \hline \end{array}$$

$$\begin{array}{r} 890 \\ - 225 \\ \hline \end{array}$$

$$\begin{array}{r} 809 \\ - 173 \\ \hline \end{array}$$

$$\begin{array}{r} 975 \\ - 855 \\ \hline \end{array}$$

$$\begin{array}{r} 908 \\ - 318 \\ \hline \end{array}$$

$$\begin{array}{r} 687 \\ - 401 \\ \hline \end{array}$$

$$\begin{array}{r} 868 \\ - 678 \\ \hline \end{array}$$

$$\begin{array}{r} 689 \\ - 565 \\ \hline \end{array}$$

$$\begin{array}{r} 897 \\ - 290 \\ \hline \end{array}$$



$919 - 548 =$

$960 - 690 =$

$710 - 666 =$

$657 - 278 =$

$588 - 183 =$

$221 - 180 =$

$783 - 600 =$

$940 - 516 =$



$24 \times \underline{\quad} = 48$

$\underline{\quad} \times 8 = 704$

$\underline{\quad} \times 6 = 144$

$10 \times \underline{\quad} = 30$

$61 \times \underline{\quad} = 488$

$\underline{\quad} \times 9 = 477$

$87 \times \underline{\quad} = 783$

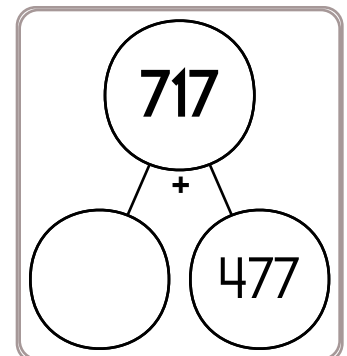
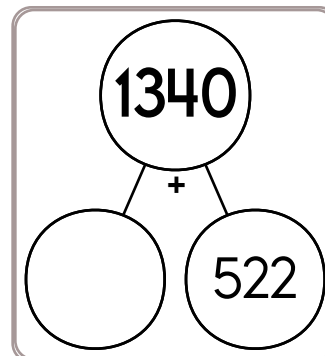
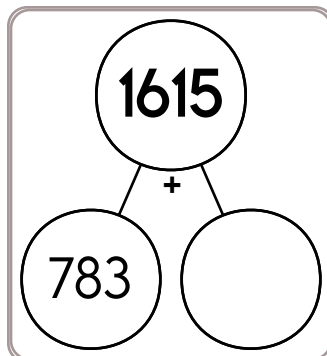
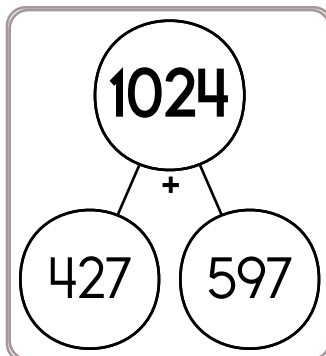
$\underline{\quad} \times 5 = 365$

$68 \times \underline{\quad} = 204$

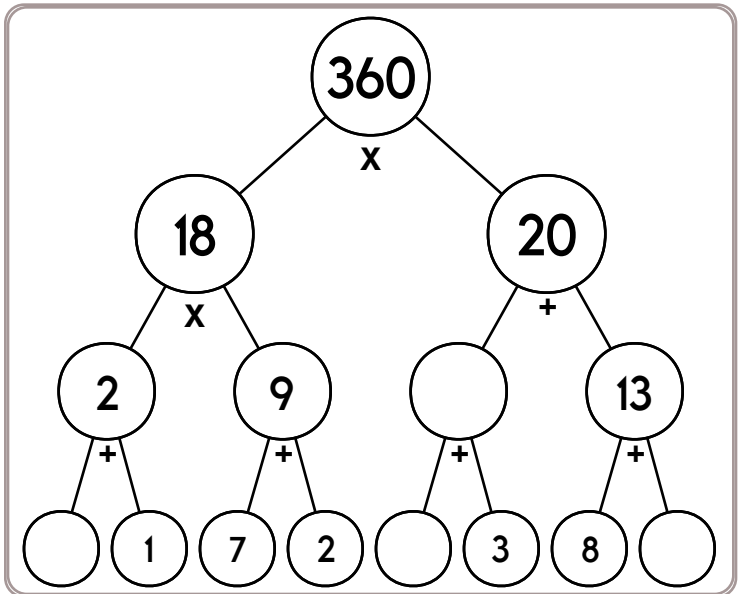
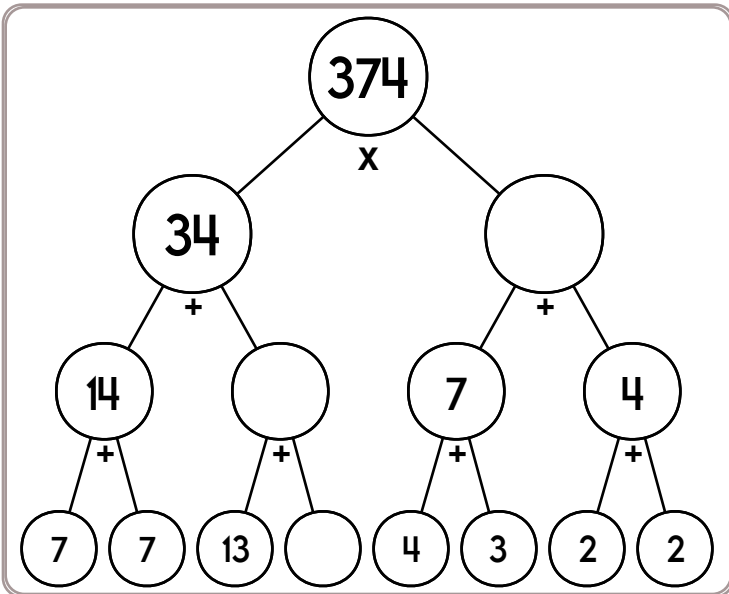
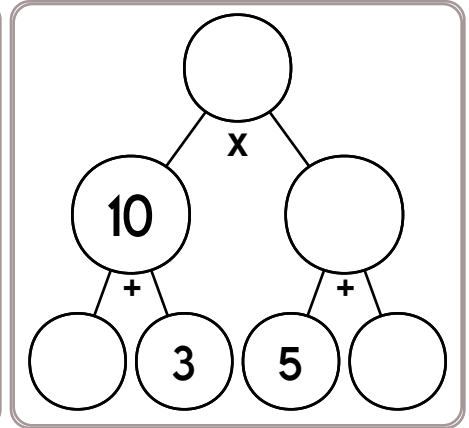
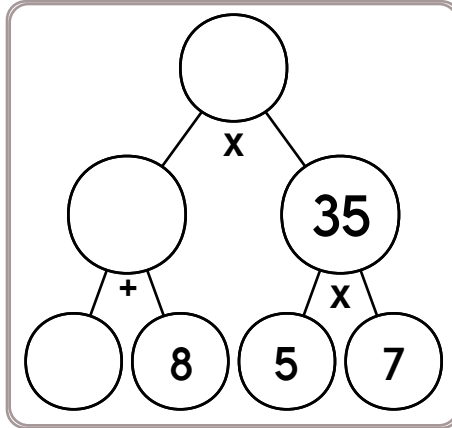
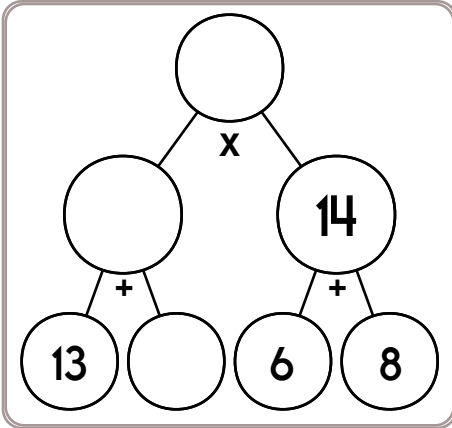
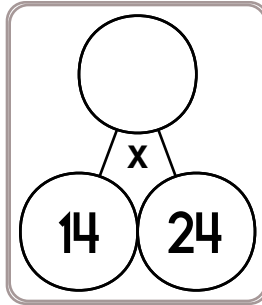
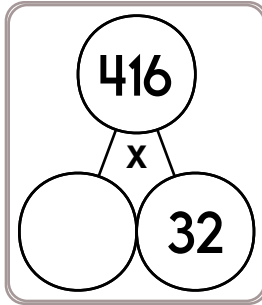
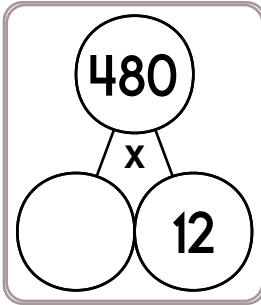
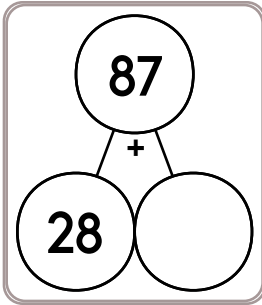
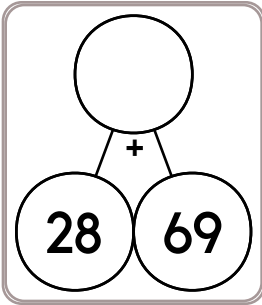
$\underline{\quad} \times 5 = 315$

$28 \times \underline{\quad} = 112$

$\underline{\quad} \times 4 = 392$



Name: \_\_\_\_\_

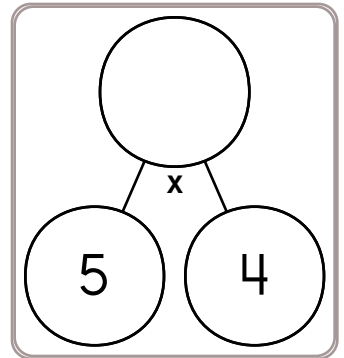
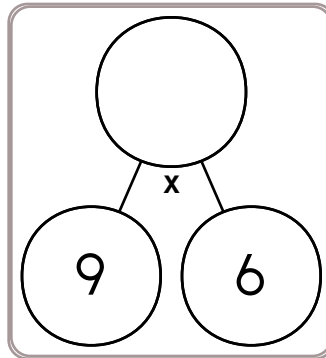
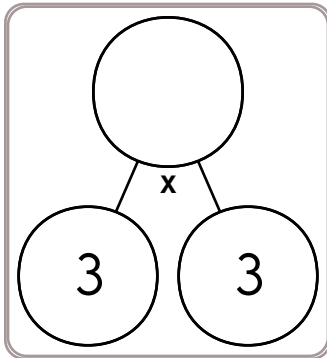
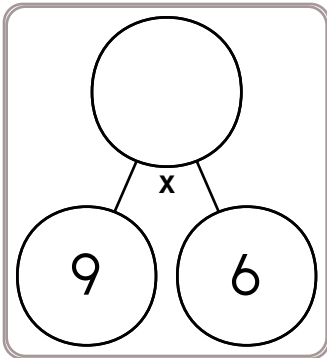
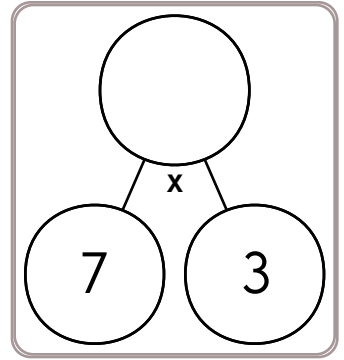
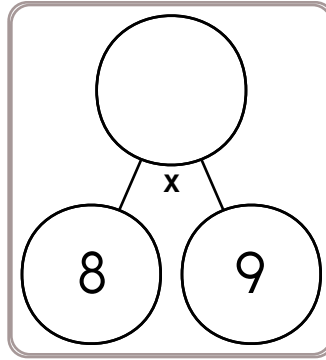
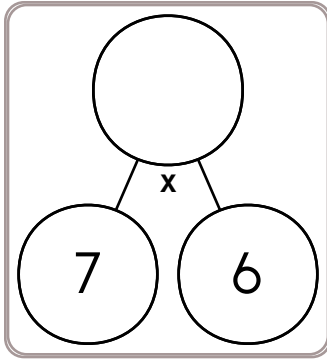
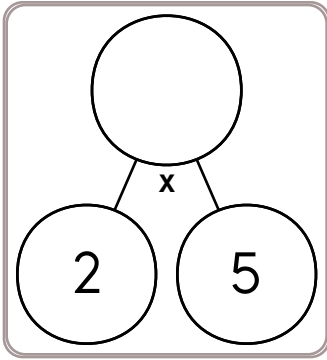


What is 50% of 1,022?

$11 - 11 + 12 \times 6$

How much time is it from 7:00 a.m. to 11:50 a.m.?

Name: \_\_\_\_\_



$86 \times 3 =$

$61 \times 8 =$

$99 \times 5 =$

$19 \times 8 =$

$37 \times 2 =$

$37 \times 5 =$

$46 \times 2 =$

$51 \times 2 =$

$71 \times 4 =$

$45 \times 6 =$

$36 \times 7 =$

$10 \times 4 =$



$\_\_ \times 3 = 18$

$9 \times \_\_ = 36$

$\_\_ \times 5 = 45$

$2 \times \_\_ = 16$

$7 \times \_\_ = 21$

$7 \times \_\_ = 14$

$\_\_ \times 6 = 54$

$\_\_ \times 8 = 24$

$4 \times \_\_ = 36$

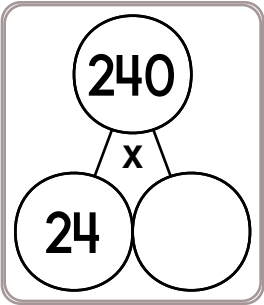
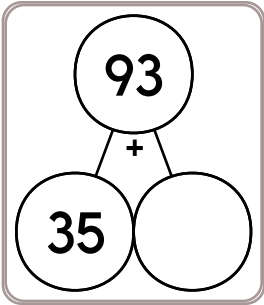
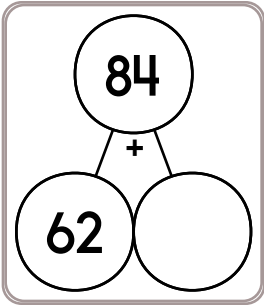
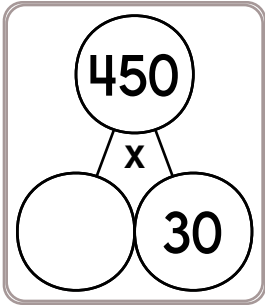
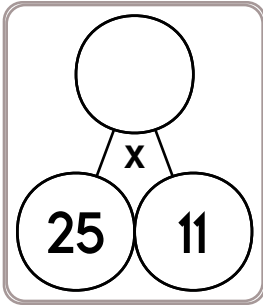
$2 \times \_\_ = 6$

$\_\_ \times 7 = 49$

$\_\_ \times 2 = 6$



Name: \_\_\_\_\_



It was 90 degrees outside. What would the temperature be if it got 23 degrees colder?

$$6 + 10 + (6 - 6)$$

How many centimeters in 3.7 meters?

It was 6 degrees below zero in the morning. By afternoon the temperature rose 19 degrees. How warm was it?

$$6 \frac{4}{7} + 9 \frac{6}{7}$$

90 divided by 10 equals

A rectangle is 50 cm on one side and 12 cm on another side. What is the perimeter?

160, 170, 180, 190,  
\_\_\_\_\_, 210

What is 50% of 844?

$$5,177 + 7,239 = \underline{\hspace{2cm}}$$

Name: \_\_\_\_\_

During the 1400's and 1500's, Leonardo Da Vinci conducted studies of motion. One of the practical applications of the studies of motion is found in car speedometers. Speed = Distance / Time. If it takes a car 12 hours to travel a distance of 678 miles, what is its average speed? Round your answer to the nearest tenth of a mile.

Ms. Floop liked to do problems in class once in a while that required the students to solve the problems mentally. Today was such a day. They were studying proportions. She began, "I am going to give you a verbal proportions problem. Ready?" The students were ready. She continued, "8 is to 12 as 22 is to \_\_\_\_\_."

In each group, use 4 of the numbers to make a proportion.

7            21            25            21            9            27

42            4            6            12            8            26

Zeeka has invented a new space vehicle to go from his home planet of Zomba to his friend's planet of Oomba. It is a fun ride! It can fly at a speed of 660 mph. How far will it go in 25 minutes?

Name: \_\_\_\_\_

<p>Chef Gavin's recipe for 5 servings of Deep Dark Chocolate Cake calls for 1 T white sugar, <math>\frac{1}{3}</math> c cocoa, <math>\frac{1}{4}</math> c flour, <math>\frac{1}{4}</math> c butter, 1 c milk, <math>\frac{1}{2}</math> c white sugar, and 4 eggs. How much cocoa will he need to make 30 servings for Christmas dinner?</p>	<p>Peter is a server at Marcelina's Restaurant in Mountain Springs. He makes \$3.93 per hour plus tips. He worked forty-three hours this week and made \$184.81 in tips. What was his total income for the week?</p>	<p>Max counted the TV dinners in the display case. Half of the dinners were fried chicken. If 6 of the dinners are fried chicken, how many TV dinners are in the display case?</p>
<p>Last year Mr. Rodriguez planted corn on 4.4 acres of his farm. His neighbor planted 1.5 times as many acres of corn. How many acres of corn did Mr. Rodriguez's neighbor plant?</p>	<p>Mr. Allen packs baseballs into boxes, 12 baseballs per box. He packs the boxes into crates, 10 boxes per crate. When he finished the day Monday, he had 12 crates, 6 boxes, and 8 loose baseballs. How many baseballs did he have when he started?</p>	<p>Jack bought 14 packages of hot dogs for the National Hot Dog Month picnic. Each package weighed 13 ounces. How many pounds of hot dogs did he buy?</p>



Name: \_\_\_\_\_

Get a fidget spinner! Spin it.

I needed to spin \_\_\_\_\_ time(s) to finish.

In the equation  $40 \times 455 = 18,200$ , which number is the product?

Name the shape with four sides and four angles.

You have a playdate in 120 minutes. How many hours is that?

How many hundreds are in the number 340,000?

At 4 p.m. today, Maria will not be able to use her electronics for 2 hours. At what time will she be able to resume using her phone?

What is 16 less than 1,599?

1, 1, 6, 1, 1, 6, \_\_\_\_\_, 1,  
6, 1, 1, 6

Draw a small clock that shows 5 minutes past 8:00.

38 is a multiple  
of 19 and 2.  
40 is a multiple  
of \_\_\_\_ and \_\_\_\_.  
14 is a multiple  
of \_\_\_\_ and \_\_\_\_.

It was 89 degrees outside. What would the temperature be if it got 17 degrees colder?

How many centimeters in 420.7 meters?

C, H, M, \_\_\_\_\_, W



Name: \_\_\_\_\_

Spin again.

I needed to spin \_\_\_\_\_ time(s) to finish.

$$7 - 4 - 2 + 2$$

$$36 \div \underline{\quad} = 9$$

$$\underline{\quad} \div 6 = 6$$

Circle the three numbers whose sum equals 21.

4 13 14 11

19 5 12 7

14, 28, 42, 56, 70, 84,  
\_\_\_\_\_, 112, 126

Is 23 a composite or a prime number?

Yummy Donuts gave three dozen chocolate donuts and four dozen jelly donuts to the school. How many donuts did they give?

How many meters are there in 62 kilometers?

What 3 coins add up to 16 cents?

Round 12,509 to the nearest thousand.

A toy car can go 3 mph. How long would it take to go 4 miles?

$$8 \div \frac{1}{2}$$

Name: \_\_\_\_\_

# The Hoosier Poet

By Jane Runyon

---

As a child, James Whitcomb Riley loved to read. But he hated school. He was born in Greenfield, a small, rural Indiana town in 1849. The land was flat. There were fields of grass and a few trees here and there. His father was a lawyer. James loved to go to the Hancock county courthouse with his father. He would watch the people. He studied their speech and their mannerisms. James' father wanted him to become a lawyer, too. James had other ideas.

James Whitcomb Riley left home and traveled the countryside in pursuit of finding what he wanted to do. He painted houses and barns. He painted signs for businesses. He joined a medicine show. He entertained the crowds that gathered to hear the owner of the show. He played the banjo, guitar, and violin. Riley would sing songs and do impersonations of people he had met along the way. The owner would then try to sell the people a "miracle" tonic that would cure all of their ills.

Eventually, Riley returned to his home in Greenfield. He got a job with the local newspaper as a reporter. He had discovered that he enjoyed writing poetry. His mother had written poetry for him as a child, and it seemed that he had her gift. Riley used the same style and words in his writing that he had heard in all his travels in Indiana. He didn't use the precise language that was taught in school. He wrote using the local dialect, the words that real people in Indiana (the Hoosier state) spoke in just the way they spoke them. He sent a few of his poems to local newspapers. Some of his works were published in Indiana. He had no luck at all in getting noticed in the larger cities like New York or Chicago, however.

Riley believed that large newspapers were not accepting his poetry because he wasn't famous. He decided to pull a trick on the papers. He convinced the editor of the Kokomo, Indiana, newspaper to help him with the trick. He wrote a poem called "Leonainie." The editor of the paper ran the poem with a story saying that it was a recently found poem by the famous writer, Edgar Allan Poe. The big city newspapers couldn't wait to reprint the poem in their own papers. When the trick was revealed to the public, Riley lost his job.

Riley kept trying. He wrote a series of poems about rural life. His first poem to receive notice was called "When the Frost is on the Punkin." He developed a series of characters for his poems. His readers became familiar with Old Aunt Mary, Little Orphant Annie, The Raggedy Man, Doc Sifers, and Uncle Sidney. His poems reminded people of a simple, quiet life at a time when the country was going through the turmoil of becoming an industrial nation.

Riley soon began traveling the country. He read his poems to gathered audiences. His work brought him fame and fortune. He spent his last years in Indianapolis, Indiana. He had become one of the best-loved poets in America. He loved children. His home was, and still is, visited by thousands of schoolchildren each year. Each October 7 is celebrated by Indiana schoolchildren to honor him on his birthday. Riley died of a stroke on July 22, 1916. He was memorialized in Indianapolis with one of the finest hospitals in the nation, the James Whitcomb Riley Hospital for Children.

Following is one of Riley's most famous poems, "Little Orphant Annie." At its beginning is the original dedication Riley made for the poem.

## Little Orphant Annie

By James Whitcomb Riley

*To all the little children: The happy ones; and sad ones;*

*The sober and the silent ones; the boisterous and glad ones;*

*The good ones- Yes, the good ones, too; and all the lovely bad ones.*

Name: \_\_\_\_\_

Little Orphant Annie's come to our house to stay,  
An' wash the cups an' saucers up, an' brush the crumbs away,  
An' shoo the chickens off the porch, an' dust the hearth, an' sweep,  
An' make the fire, an' bake the bread, an' earn her board-an'-keep;  
An' all us other children, when the supper-things is done,  
We set around the kitchen fire an' has the mostest fun  
A-list'nin to the witch-tales 'at Annie tells about,  
An' the Gobble-un 'at gits you

Ef you

Don't

Watch

Out!

Wunst they wuz a little boy wouldn't say his prayers,-  
An' when he went to bed at night, away up-stairs,  
His Mammy heerd him holler, an' his Daddy heerd him bawl,  
An' when they turn't the kivvers down, he wazn't there at all!  
An' they seeked him in the rafter-room, an' cubby-hole, an' press,  
An' seeked him up the chimbly-flue, an' ever'-wheres, I guess;  
But all they ever found wuz thist his pants an' roundabout;  
An' the Gobble-uns'll git you

Ef you

Don't

Watch

Out!

An' one time a little girl 'ud allus laugh an' grin,  
An' make fun of ever'one, an' all her blood-an'-kin;  
An' wunst, when they was "company," an' ole folks wuz there,  
She mocked 'em and shocked 'em, an' said she didn't care!  
An' thist as she kicked her heels, an' turn't to run an' hide,

Name: \_\_\_\_\_

They wuz two great big Black Things a-standin' by her side,

An' they snatched her throught the ceilin' 'fore she knowed what she's about!

An' the Gobble-uns'll git you

Ef you

Don't

Watch

Out!

An' little Orphant Annie says when the blaze is blue,

An' the lamp-wick sputters, an' the wind goes *woo-oo!*

An' you hear the crickets quit, an' the moon is gray,

An' the lightnin'-bugs in dew is all squenched away,

You better mind yer parents, an' yer teachers fond an' dear,

An' churish them 'at loves you, an'dry the orphant's tear,

An' he'p the pore an' needy ones'at clusters all about,

Er the Gobble-uns'll git you

Ef you

Don't

Watch

Out!

The Hoosier Poet

## Questions

---

- \_\_\_\_\_ 1. James Whitcomb Riley loved school.
- A. false
  - B. true
- \_\_\_\_\_ 2. What did Riley write poems about?
- A. famous people
  - B. farm animals
  - C. life in rural Indiana
  - D. life in the big city



Name: \_\_\_\_\_

- \_\_\_\_\_ 3. What was not one of Riley's early jobs?
- A. house painter
  - B. entertainer
  - C. magician
  - D. reporter
4. What did Riley believe was keeping his poems from being published throughout the country?
- \_\_\_\_\_
- \_\_\_\_\_

- \_\_\_\_\_ 5. Riley was given the name "Hoosier Poet." What does that mean?
- A. Hoosier means farmer.
  - B. He asked, "Who's yer family?"
  - C. He wrote about the Hoosier Indians.
  - D. He was from Indiana, the Hoosier state.

- \_\_\_\_\_ 6. Why were Riley's poems different from most poems?
- A. They used words written like the country people talked.
  - B. They were written in a foreign language.
  - C. They were hard to understand.
  - D. They were short.

- \_\_\_\_\_ 7. How did Riley promote his poetry?
- A. He had his own TV show.
  - B. He traveled around the country reading his poetry to audiences.
  - C. He took out ads in the newspaper.
  - D. He let other people promote it for him.

$$13 - \frac{7}{9} + \frac{1}{2} =$$

Reduce  $\frac{91}{105}$  to its lowest terms.

Reduce  $\frac{14}{36}$  to its lowest terms.

It was 5 degrees above zero in the morning. By afternoon the temperature rose 17 degrees. How warm was it?

How much money is 1 quarter, 4 dimes, 1 nickel, and 1 penny?

Write  $\frac{15}{20}$  in lowest terms.

Name: \_\_\_\_\_

In 1996 the Taco Bell Corporation said it had bought the Liberty Bell. They said they would call it the Taco Liberty Bell. Many people were very angry. Taco Bell said that it was a joke! Perhaps 420 people wrote letters or made phone calls about the joke. If  $\frac{1}{5}$  of the people wrote letters, how many made phone calls?

Hunter's older brother is in the United States Navy and is assigned to a submarine. Hunter's brother once told him that the submarine was 4 nautical miles offshore. How many standard miles was it offshore? Round your answer to the nearest tenth. (One nautical mile = 6,080 feet. One mile = 5,280 feet.)

Show the steps to solve  $6(34 - 7 + 16) + 615 \div 3 \times 12 - 86$

Parentheses

Exponents

Multiplication & Division (or Division & Multiplication!)

Addition & Subtraction (or Subtraction & Division!)

$$1 \text{ km} = 1,000 \text{ m}$$

$$14 \text{ km} = \underline{\hspace{2cm}} \text{ m}$$

$$48 \div 6 = \underline{\hspace{2cm}}$$

$$12 \times 7 = \underline{\hspace{2cm}}$$

Name: \_\_\_\_\_

Write the final part of each math analogy.

five + six : 11 :: seven + twelve :

Explain why you think your answer is correct.

August 3rd : Saturday :: September 4th :

Explain why you think your answer is correct.

two thirds of nine : 6 :: two thirds of six :

Explain why you think your answer is correct.

32 crackers in 4 bags : 8 :: 35 crackers in 5 bags :

Explain why you think your answer is correct.

6 x 11 : 66 :: 12 x 6 :

Explain why you think your answer is correct.

9,469 : 9,000 :: 8,544 :

Explain why you think your answer is correct.

Name: \_\_\_\_\_



$18 \div 3 =$

$48 \div 8 =$

$56 \div 8 =$

$99 \div 9 =$

$121 \div 11 =$

$32 \div 4 =$

$54 \div 9 =$

$9 \div 3 =$



$\_ \div 4 = 6$

$27 \div \_ = 9$

$12 \div \_ = 4$

$\_ \div 6 = 7$

$48 \div \_ = 8$

$\_ \div 2 = 2$

$28 \div \_ = 7$

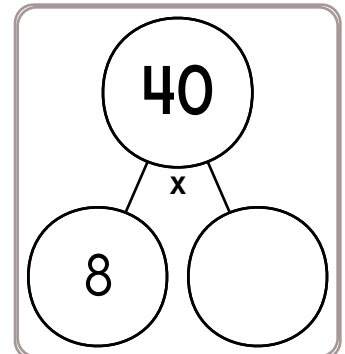
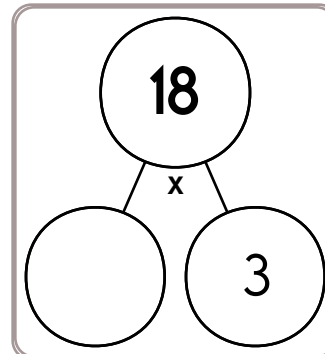
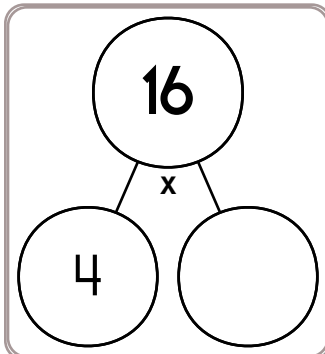
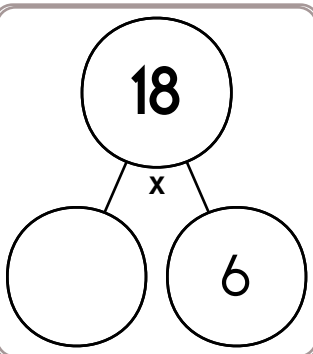
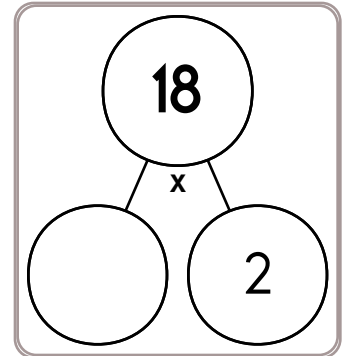
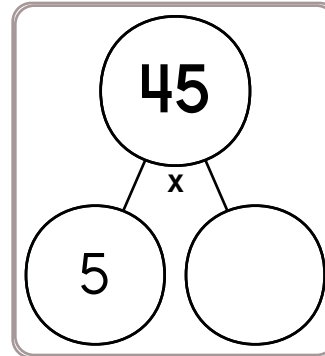
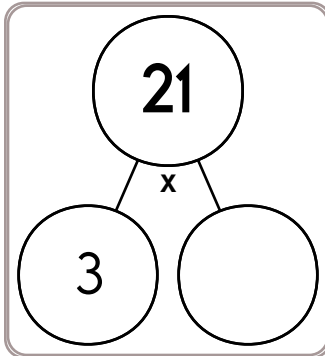
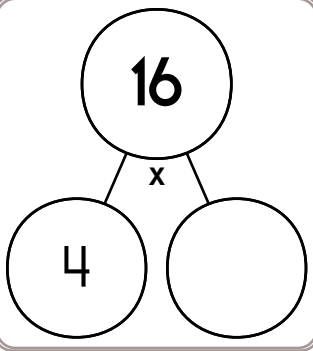
$\_ \div 9 = 4$

$\_ \div 7 = 9$

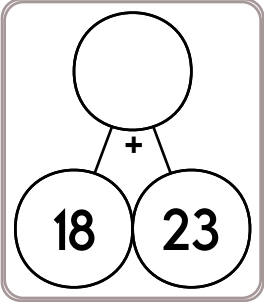
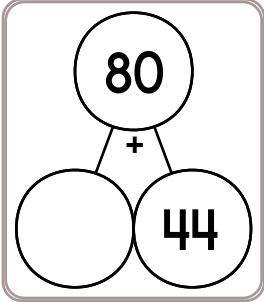
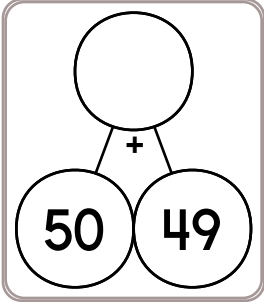
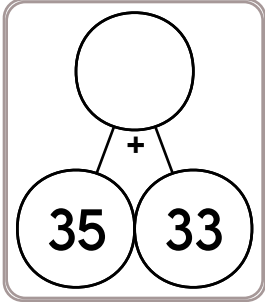
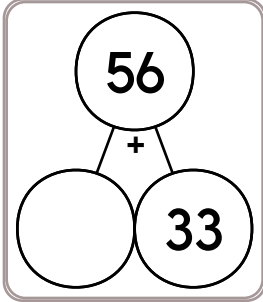
$16 \div \_ = 2$

$8 \div \_ = 4$

$\_ \div 3 = 7$



Name: \_\_\_\_\_



$$(7 \times 9) - 1 - 6$$

What is the area of a rectangle with sides 4 cm and 12 cm?

36, 39, 43, 48,  
\_\_\_\_\_, 61, 69, 78, 88,  
99, 111

$$41 + n = 58$$

$\frac{1}{16807}$ ,  $\frac{1}{2401}$ ,  $\frac{1}{343}$ ,  
\_\_\_\_\_,  $\frac{1}{7}$ , (1), (7),  
(49), (343)

Round the decimal 0.645 to the nearest hundredth.

How many minutes is it from 6:00 a.m. to 11:35 a.m.?

How many centimeters in 6.3 meters?

Round 9,306 to the nearest thousand.

Name: \_\_\_\_\_

# James Blake: The Bus Driver

By Erin Horner

---

In the 1950s bus drivers in Montgomery, Alabama, had a lot of power. They called it "police power." They enforced segregation laws on their buses. They also forced black people to follow special rules any time they climbed aboard.

One Montgomery bus driver made a strong impression on Rosa Parks. It was not a good impression! The driver was James Blake. Rosa described him as being tall, thick, and intimidating with rough-looking skin. He treated every black person badly. One day in the winter of 1943, Rosa boarded his very crowded bus. The back half was full with black passengers. They were everywhere! Many people were even standing on the back stairs. Mr. Blake looked at Rosa. He told her to get off the bus and board it again from the back. Rosa objected. She was already on the bus and didn't see the need to get off and on again. She didn't even think it was possible to board in the back. The passengers back there were squished like sardines in a tin can! The driver told her that if she couldn't squeeze in through the back door then there wasn't room for her on the bus. Then he grabbed Rosa's coat sleeve. Slowly, Rosa moved towards the front of the bus and dropped her purse. She could have bent over and grabbed it. Instead, she decided to make an impression of her own. Rosa sat down in the front seat—a white seat. Then, while seated, she bent over and picked up her purse. This made Mr. Blake very angry! He stood over the top of her and yelled, "Get off my bus." Rosa decided that she would never again board a bus without looking to see who was driving it. She didn't want to run into Mr. Blake again.



For twelve years she avoided him. Then on December 1, 1955, Rosa boarded a bus without first checking to see who was behind the wheel. The driver was James Blake. Rosa was about to have another run-in with him. This run-in made more than an impression. It made history. James Blake was the driver who had Rosa Parks arrested for refusing to give up her seat on the bus. Mr. Blake may have assumed that he was putting Rosa in her place for breaking the law. He put her in her place alright; he put her in the spotlight. Rosa's arrest helped to start the civil rights movement. That movement made an impression on the entire country!

James Blake: The Bus Driver

## Questions

---

- \_\_\_\_\_ 1. After meeting Mr. Blake, Rosa Parks always looked to see who was driving a bus before boarding it. Why?
  - A. Some drivers were not very safe.
  - B. Rosa only wanted to ride with her favorite drivers.
  - C. Certain drivers made her carsick.
  - D. She did not want to interact with James Blake again.
  
2. James Blake wanted Rosa Parks to get off of the bus and then board again in the back. Why didn't Rosa want to do this?

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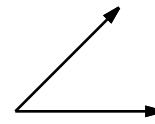


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Name: \_\_\_\_\_

- \_\_\_\_\_ 3. **The passengers back there were squished like sardines in a tin can!** Which figurative language technique is being used in this sentence from the passage?
- foreshadowing
  - onomatopoeia
  - metaphor
  - simile
- \_\_\_\_\_ 4. Which of the following happened first?
- Rosa boarded the bus on December 1, 1955.
  - James Blake had Rosa arrested.
  - Rosa dropped her purse and sat in a white seat to pick it up.
  - James Blake grabbed Rosa's coat sleeve.

Sketch 2 lines  $\overleftrightarrow{KL}$  and  $\overleftrightarrow{VW}$  that are perpendicular.



What kind of angle is this?

$$(11 - 3) \times 9 + 3$$

110 divided by 10 equals

What is 50% of 1,726?

4, 10, 12, \_\_\_\_\_, 48,  
86, 160, 294, 540, 994,  
1828, 3362, 6184, 11374

It's 9:00 a.m. and Pam is getting ready for soccer practice. If practice starts at 3:25 p.m., then how much longer until soccer starts?

A toy car can go 3 mph. How long would it take to go 7 miles?

$$110 \div 10 = \underline{\hspace{2cm}}$$

Name: \_\_\_\_\_

Circle five things that are different in picture B when you compare it to picture A.



Write in a word for each type requested.

adverb: \_\_\_\_\_

noun: \_\_\_\_\_

verb: \_\_\_\_\_

pronoun: \_\_\_\_\_

adjective: \_\_\_\_\_

Put in the missing number that completes this problem.

$$\begin{array}{r}
 \text{♥} \quad 52 \quad \text{♥} \\
 + 16 \\
 + \text{♥} \\
 + 44 \\
 \hline
 195
 \end{array}$$



Name: \_\_\_\_\_

Complete each pattern. Write what the rule is.

773224, 322477, 247732, 773224, 322477, \_\_\_\_\_, 773224,  
322477, 247732, 773224, 322477, 247732, 773224, 322477

33277, 27733, 73327, 32773, 77332, 33277, 27733,  
73327, 32773, \_\_\_\_\_, \_\_\_\_\_, 27733, 73327, \_\_\_\_\_

Complete each pattern. Write what the rule is.

6.3	12.6	18.9
25.2	31.5	
44.1		56.7

Name: \_\_\_\_\_

# Ronald Reagan

By Meg Leonard

---

Ronald Reagan was the fortieth president. He was born in 1911 in Illinois. Ronnie played football in college. He also acted in plays. After college, Reagan announced sports on the radio. Then, he moved to Hollywood. He became an actor. He acted in fifty-three movies. Next, he became involved in politics. He was elected as the governor of California in 1966. He served two terms. Then he was nominated for president in 1980. He won most of the Electoral College votes. Sixty-nine days after he was sworn in, Reagan was shot. Luckily, he survived the shooting. For a second term, he won by many votes. It was the largest landslide in history. An election is called a landslide when one candidate gets almost all of the votes. Reagan selected the first woman to be on the Supreme Court. The country had a huge debt during his presidency, but in spite of that, Reagan was a very popular president. In 1994, Reagan told the country that he had Alzheimer's disease. This disease affects a person's memory, and there is no cure for it. Reagan died in 2004.



Ronald Reagan

## Questions

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- \_\_\_\_\_ 1. Who was Ronald Reagan?
- A. the thirty-ninth president
  - B. the fortieth president
  - C. the thirty-eighth president
  - D. the thirty-fourth president
- \_\_\_\_\_ 2. What was Reagan's job after college?
- A. radio sports announcer
  - B. president
  - C. actor
  - D. governor
- \_\_\_\_\_ 3. What happened sixty-nine days after Reagan's election as president?
- A. He announced that he was sick.
  - B. He decided he didn't want to be president anymore.
  - C. He died.
  - D. He was shot.
- \_\_\_\_\_ 4. What disease did Reagan have?
- A. kidney
  - B. Alzheimer's
  - C. heart
  - D. lung

Name: \_\_\_\_\_

5. What is a landslide election?

---

---

$$\frac{18}{?} = \frac{3}{4}$$

Change to a decimal.  
3%

Change to a percent.

$$\frac{1}{100}$$

$$4 + 4 - 3 \times 1$$

$$6\frac{1}{3} + 2\frac{1}{3}$$

$$36 \div 12 - 3$$

The radius of a circle is 418 cm. What is the diameter of this circle?

It was 4 degrees above zero in the morning. By afternoon the temperature rose 28 degrees. How warm was it?

43, 59, 75, 91, 107, 123,  
139, \_\_\_\_\_, 171

The area of a rectangle is  $24 \text{ cm}^2$ . What could the length of the 4 sides be?

798654, 986547,  
\_\_\_\_\_, 654798, 547986,  
479865, 798654,  
986547, 865479,  
654798, 547986,  
479865, 798654, 986547

It was 4 degrees below zero in the morning. By afternoon the temperature rose 18 degrees. How warm was it?

Name: \_\_\_\_\_

There were 51 cows in the herd. Of that number,  $\frac{3}{4}$  were brown,  $\frac{2}{12}$  were black and white, and  $\frac{1}{12}$  were black. Which group had more cows in it?

Every week Peter spends  $\frac{1}{2}$  of his allowance on books and  $\frac{1}{3}$  of it on snack food. What fraction of his weekly allowance is this in all?

Jen is really into science. She invented a robotic bug that burps. Her brother loves it, so she wanted to burp her brother today. She checked her phone, and her brother is currently 3.4 miles away. After she set the coordinates on the phone the robotic bug left. She got a burp confirmation 309.4 seconds later when it reached her brother. How fast did this burping bee travel in miles per hour?

"Hey, Ted!" called out his friends. But Ted didn't reply. He was texting. They don't call him Texty Ted for nothing! Ted sends an average of 73 texts in only 5 minutes. At precisely 3:18 Ted finally sat down outside of school to play his phone. He played his phone until 3:48 when his phone ran out of power. How many texts do you think Texty Ted sent?

Name: \_\_\_\_\_

Mr. Clark told his class they could have pizza, hot dogs, or hamburgers to celebrate Admit You're Happy Month. 20% of the class voted for pizza, 23% voted for hot dogs, and the rest voted for hamburgers. If there are 30 students in the class, how many voted for hamburgers?

Mr. Young is getting married soon. He is buying ties and tie tacks for his groomsmen. The ties cost \$41.63 each, and a tie tack costs \$82. The store will wrap the packages for \$2.75 each. He will have 6 groomsmen. How much will he spend on the gifts?

Yummy Donuts gave two dozen chocolate donuts and six dozen jelly donuts to the school. How many donuts did they give?

Round 91,870 to the nearest hundred.

Estimate quickly the difference.  
7,340 - 2,820

Mrs. Walker gave each of her 3 children an equal amount of money to spend at the beach. She gave them \$20.16 in all. How much money did each child get?

Sandy's Sweet Shoppe sold 28 chocolate ice cream cones on Sunday. That amount is  $\frac{3}{5}$  of the total number of cones sold. How many cones were sold in all?

Adam saw a sign in the hardware store that read, "Masking tape: \$1.86 per roll or \$10 for a box of 6 rolls". How much will Adam save if he buys a box of masking tape instead of 6 separate rolls?

How many minutes is it from 9:00 a.m. to 10:55 a.m.?

The perimeter of a rectangle is 26 cm. The longer side is 9 cm. How long is the shorter side?

108 divided by 9 equals

Name: \_\_\_\_\_

The weather played a trick on April Fool's Day last year. In Linville it snowed 30.9 inches! The average snowfall in Linville for April Fool's Day is 0.52 inches. How much greater was last year's snowfall than the average for April?

Painter Bears, tiny stuffed bears in rainbow colors, are sold in sets of three. If three of the bears cost \$9.72, how much would 24 of the bears cost?

Mr. Johnson keeps his ties in an irregular six-sided box. The perimeter of the box is 120 cm. He knows that five of the sides are 17 cm each. What is the length of the remaining side?

$$|-15| - t = 19$$

$$t =$$

$$\frac{1}{10} \times \frac{3}{11}$$

$$|-14| - z = 9$$

$$z =$$

Rose worked at the fair over the summer and earned \$662. She worked a total of 20 days. About how much money did she earn each day?

Mr. Robinson bought a case of rope licorice for his store. The case cost \$162.50. There are 10 boxes in a case and 12 bags in a box. Each bag contains 6 ropes of red licorice. How many ropes are there in a case?

Mrs. Garcia made an American flag in her sewing class. The flag had 13 stripes that were each  $2\frac{2}{5}$  inches wide. The long stripes were 52 inches long (the same as the length of the flag). What was the perimeter of the flag she made?

Name: \_\_\_\_\_

Maria was bored. She asked her mother if she could make cookies. Her mother agreed, so Maria got busy. She made 3 dozen oatmeal cookies and 20 chocolate chip cookies. How many cookies did she make in all?

Mary built a new cabinet for one of her antique radios. The front of the cabinet is 9.2 inches wide and 11.2 inches high. If she doubles the length and width, what will the area be? Round your answer to the nearest hundredth.

The ratio of Coke syrup to carbonated water is 1:5. How much carbonated water would be used to dilute 28.3 gallons of Coke syrup?

Rewrite  $\frac{23}{25}$  as a decimal.

$$\frac{9}{10} \div \frac{33}{40} =$$

$$3 \times 3 \times 3 = 3^x$$

What is the value of x?

A roll of  $\frac{1}{2}$ -inch wide masking tape costs \$0.59 per yard. A roll of  $\frac{3}{4}$ -inch wide masking tape costs \$0.95 per yard. How much more does a 30 yard roll of  $\frac{3}{4}$ -inch wide masking tape cost than a roll of  $\frac{1}{2}$ -inch wide tape?

The mailman has 29 pieces of mail left in his bag. Nine are for the Johnsons and the rest are for the Martins. If he takes one piece of mail out at random, what are the odds it will be for the Johnsons? Write your answer as a fraction.

Justin found 30 seashells. He put them in a bag and pulled out 3 pink shells out of 12 pulls. Predict the number of pink shells he will pull in 12 more pulls.

Name: \_\_\_\_\_

# Great Hornbills

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Great hornbills are among the most unique-looking bird species in the world. Their other name, Indian hornbills, implies that we can find them in India. But their residences actually extend to several Southeast Asian countries. They are found in Thailand, Indonesia, Myanmar (formally known as Burma), and Malaysia. Living in forests, great hornbills have eye-catching yellow helmets (or casques) that extend from the top of their heads to the middle of their large, strong, downward-curving bills. Their faces and chins are black. Their necks and the back of their heads are yellowish-white. Their feathery coats are black with white wingtips. As if their appearance is not extraordinary enough, great hornbills also have a wide stripe of black across the center of their all-white tails.



Great hornbills measure about five feet long. They weigh around six pounds. Fruits are their favorite food. They also supplement their diet with lizards, snakes, insects, mice, and other small animals.

Great hornbills are slow but powerful fliers. When they are in flight, they make loud, swooshing sounds. Male and female great hornbills look alike. But telling them apart is relatively easy, so long as you look closely. Male great hornbills have a black trim between their casques and their bills. Females do not. Also, male great hornbills have black-rimmed red irises. Female great hornbills have red-rimmed white irises.

The nesting behaviors of great hornbills are even more intriguing. Great hornbills practice monogamy. That is, once a male great hornbill finds his sweetheart, he remains loyal to her for his entire life. As the two prepare to breed, they find a hollow tree trunk high above the ground. Then, the female great hornbill enters the cavity. She plasters the entrance with droppings and mud and seals herself inside. She stays in this confinement for the next three months. During that time, she molts (replaces her feathers with new ones). She lays and incubates from one to four eggs. And then she looks after the hatched chicks.

How does the female great hornbill survive three months of captivity if she cannot go out to look for food? Well, she doesn't have to. She gets outside help from her devoted husband. The male great hornbill collects food and passes it to his hungry wife and chicks through a narrow opening of the otherwise sealed entrance. When baby great hornbills are about 2 months old, the female great hornbill leaves the nest. She joins her husband in food gathering and nurturing the offspring. Their chicks remain hidden inside the nest for another month. As a great hornbill chick reaches its three-month birthday, it emerges from the tree trunk and flies away.

Great Hornbills

## Questions

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- \_\_\_\_\_ 1. Where can we find great hornbills?
  - A. Mongolia
  - B. Korea
  - C. India
  - D. Russia
  
- \_\_\_\_\_ 2. Which of the following statements about great hornbills is true?
  - A. Great hornbills have black wingtips on their white wings.
  - B. Great hornbills' helmet-like casques extend from the top of their heads to the middle of their bills.
  - C. Their main diet consists of lizards, snakes, insects, mice, and other small animals.
  - D. Like owls, great hornbills are silent fliers.
  
- \_\_\_\_\_ 3. Because we can only find great hornbills in India, we also call these birds great Indian hornbills.
  - A. false
  - B. true



Name: \_\_\_\_\_

- \_\_\_\_\_ 4. How can we tell the difference between a male great hornbill and a female great hornbill?
- A. A male great hornbill has a casque, whereas a female great hornbill does not.
  - B. A male great hornbill has red-rimmed white irises, whereas a female great hornbill has black-rimmed red irises.
  - C. A male great hornbill has a black trim between his casque and bill, whereas a female great hornbill has a white trim between her casque and bill.
  - D. A male great hornbill has black-rimmed red irises, whereas a female great hornbill has red-rimmed white irises.
- \_\_\_\_\_ 5. Great hornbills build their nests in treetops.
- A. false
  - B. true
- \_\_\_\_\_ 6. Which of the following statements about great hornbills' nesting behaviors is correct?
- A. A female great hornbill uses her large, strong bill to dig an underground nest.
  - B. A female great hornbill leaves her nest immediately after her babies hatch.
  - C. A female great hornbill fasts and survives on stored fats while she incubates her eggs.
  - D. A female great hornbill lives inside a sealed tree trunk for about three months.
- \_\_\_\_\_ 7. Which of the following activities is NOT what a female great hornbill would do while she incubates and looks after her hatched babies? (Please choose two of the best answers.)
- A. searching for food
  - B. flying
  - C. molting
  - D. staying home
- \_\_\_\_\_ 8. Which of the following statements best describe a great hornbill?
- A. The great hornbill colors its neck and the back of its head in bluish gray.
  - B. The great hornbill has white wings and black wingtips.
  - C. The great hornbill has a wide stripe of black across the center of its white tail.
  - D. The great hornbill's face is yellowish white.
- \_\_\_\_\_ 9. Great hornbills measure around 5 feet long and weigh about 6 pounds.
- A. false
  - B. true
- \_\_\_\_\_ 10. Which of the following statements about great hornbills is NOT true?
- A. Great hornbills are monogamists.
  - B. Great hornbill chicks are abandoned after they are two months old.
  - C. Great hornbill chicks become independent after they are three months old.
  - D. Female great hornbills lay 1-4 eggs at a time.

A toy car can go 3 mph.  
How long would it take to go  
5 miles?

Round the decimal 0.655 to  
the nearest hundredth.

What is the area of a  
rectangle with sides 2 cm  
and 11 cm?

Name: \_\_\_\_\_

Only use a pencil to write the numbers on the blank lines.

You do not need any scrap paper! Solve it in your head.

If you forget a number, then start over. Cool, huh?

# Mental Math



= Do it  
in your  
head!

imagine 9 in your  
head

subtract 8

add 2

Write the number.

\_\_\_\_\_   
 A

imagine 7 in your  
head

subtract 3

multiply 4

double it

add 3

Write the ones digit.

\_\_\_\_\_   
 B

imagine 5 in your  
head

subtract 5

add 1

add 4

Write the number.

\_\_\_\_\_   
 C

imagine 5 in your  
head

add 1

add 6

multiply 12

Write the hundreds  
digit.

\_\_\_\_\_   
 D

What is the sum?

$A + B + C + D$

\_\_\_\_\_

Wow! Great job! That's the answer, but do you know how to SPELL the number?

\_\_\_\_\_ r \_\_\_\_\_ e \_\_\_\_\_

9 before 12 \_\_\_\_\_

8 after 14 \_\_\_\_\_

2 after 17 \_\_\_\_\_

8 before 18 \_\_\_\_\_

9 after 19 \_\_\_\_\_

5 after 16 \_\_\_\_\_

1 before 11 \_\_\_\_\_

4 after 12 \_\_\_\_\_

1 after 13 \_\_\_\_\_

6 before 14 \_\_\_\_\_

6 after 15 \_\_\_\_\_

3 after 11 \_\_\_\_\_

Name: \_\_\_\_\_

# Eleanor Roosevelt

By Meg Leonard

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*First Lady Eleanor Roosevelt with her dog, Fala.*

Anna Eleanor Roosevelt was born in 1884. She lived in New York City. She was the niece of a president. His name was Theodore Roosevelt. Both of her parents died when she was little. As a teenager, Eleanor met Franklin Roosevelt. He was a distant cousin. They were married in 1905. The couple had six children. One died as a baby. Franklin came down with polio. This disease can paralyze the legs. Eleanor helped Franklin do many things. She worked as his eyes and ears. He trusted her to report things to him. In 1933, Franklin was elected President. Eleanor became the First Lady. Many people liked and respected her. She was charming and friendly. Eleanor was a unique First Lady for the time. She held press conferences. She traveled all over the country. She gave speeches both in person and on the radio. She also had a daily newspaper column. She reported her own opinions in this column. It was called "My Day." Franklin died in 1945. One year later, Eleanor was asked to be an American delegate to the United Nations. Eleanor spent her entire life helping others. She died in 1962.



Eleanor Roosevelt

## Questions

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- \_\_\_\_\_ 1. Who was Eleanor Roosevelt?
  - A. wife of Theodore Roosevelt
  - B. President of the United Nations
  - C. a doctor
  - D. wife of Franklin Roosevelt
  
- \_\_\_\_\_ 2. Who was Eleanor's uncle?
  - A. Theodore Roosevelt
  - B. John F. Kennedy
  - C. Lyndon Johnson
  - D. Franklin Roosevelt
  
- \_\_\_\_\_ 3. What was the name of Eleanor's newspaper column?
  - A. My Column
  - B. My Day
  - C. My Life
  - D. My World
  
- \_\_\_\_\_ 4. What did Eleanor do after Franklin's death?
  - A. became president
  - B. became vice president
  - C. became a teacher
  - D. became a delegate to the United Nations

Name: \_\_\_\_\_

5. Name things that Eleanor did while she was First Lady.

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Circle the smallest number: 9,260 65,914,658,793 5,864,807,234 517,438,970,321	$\begin{array}{r} 300 \\ + 378 \\ \hline \end{array}$	$30 \div 10 = \underline{\hspace{2cm}}$
--------------------------------------------------------------------------------------------	-------------------------------------------------------	-----------------------------------------

Jessica took three numbers greater than 1 and multiplied them. One number was four and the other number was fifteen. Of course, she forgot the last number, but she remembered the product was 180. Is this possible?	$\begin{array}{r} 24 \\ + 25 \\ \hline \end{array}$	$\begin{array}{r} 55 \\ - 44 \\ \hline \end{array}$
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------	-----------------------------------------------------

What number is halfway between 12 and 22?	Can 375 be evenly divided by 7? Circle: 375 is evenly divisible by 7 375 is NOT evenly divisible by 7
$7 \times 12 =$	

$\begin{array}{r} 452 \\ - 168 \\ \hline \end{array}$	$9,556 - 1,395 = \underline{\hspace{2cm}}$	$3 \times 4 = \underline{\hspace{2cm}}$
-------------------------------------------------------	--------------------------------------------	-----------------------------------------

$4 \times 4 = \underline{\hspace{2cm}}$
-----------------------------------------

Name: \_\_\_\_\_

During the month of Ramadan, Muslims fast from sunrise to sunset. In New York City, the sun will rise at 7:13 a.m. and set at 6:23 p.m. on October 16. How long will the Muslims in New York City fast on that day?

The planners of the Boston Marathon bought 18 tables to put cups of water on for the runners. Each table was in the shape of parallelogram with a base of 6.4 feet and a height of 4.5 feet. What was the area of each table?

In each group, use 4 of the numbers to make a proportion.

9      14      32      18      6      21

14      5      40      112      4      37

"Hey, Ted!" called out his friends. But Ted didn't reply. He was texting. They don't call him Texty Ted for nothing! Ted sends an average of 76 texts in only 6 minutes. At precisely 3:20 Ted finally sat down outside of school to play his phone. He played his phone until 3:52 when his phone ran out of power. How many texts do you think Texty Ted sent?

Name: \_\_\_\_\_

Write the ratio as a fraction  
in lowest terms.  
5 cats to 12 dogs

Find 4% of 92.

$$\frac{1}{4} = \frac{?}{44}$$

Write the ratio as a fraction  
in lowest terms.  
11 robots to 12 computers

$$\frac{2}{4} = \frac{8}{?}$$

Write the ratio as a fraction  
in lowest terms.  
8 to 10

Write the ratio as a fraction  
in lowest terms.  
7 dimes to 8 quarters

Change to a percent.  
0.9

Change to a percent.

$$\frac{3}{10}$$

Change to a fraction.  
4%

Write as a percent.

Change to a percent.

$$\frac{10}{16}$$

$$\frac{6}{100}$$

62 is what % of 100?

Write as a percent.

Change to a percent.  
0.86

$$\frac{1}{4}$$