SCHOLASTIC

Must-Know Math™

25 Activities to Build Key Skills in 4th Grade

My name _____

Name Game

Find the correct path by following the directions in each box to draw an arrow to the next box. The arrows can go up, down, or diagonally. (We did the first one for you.) The last box you come to will reveal the name of the dog you see at the bottom of this page.

65,427,891
Find the number that has 6 more tens.
Ralph

65,427,951
Find the number that has 7 fewer millions.
Fluffy

258,427,951
Find the number that is 8 thousand more.
Roger

585,755,951
You've reached the end and found the name.
Zero

58,427,951
Find the number that is 2 hundred million greater.
Spot

258,435,951
Add 3 hundred million and find the new number.
Fraction

485,755,951
Find the number that is greater by 100 million.
Bubbles

468,435,951
Subtract 700,000 and find the new number.
Trouble

558,435,951
Find the number that is 90 million less.
Problem

485,695,951
Find the number that is 60 thousand greater.
Champ

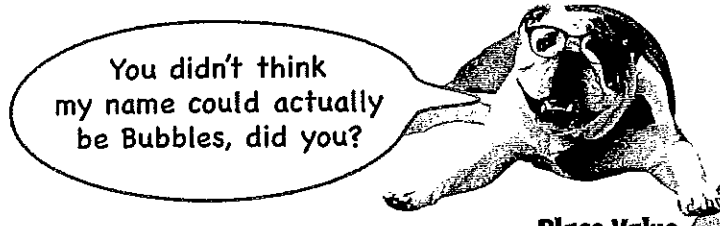
501,735,951
Subtract 40,000 and find the new number.
Scooter

467,735,951
Find the number that is 4 million greater.
Bowzer

491,695,951
Subtract 6 million and find the new number.
Rex

501,695,951
Find the number that is 10 million less.
Data

471,735,951
Add 30 million and find the new number.
Rocket



Hello, Solar System!

First, use the chart to label the diagram of our solar system. (Hint: You'll need to put the planets' distances from the sun in order from least to greatest.) Then read each set of planet facts below. Find the standard form of the number in blue to figure out which planet the facts describe.

Planets' Distances From the Sun (in miles)

Earth — 92,960,000
Jupiter — 483,700,000
Mars — 141,600,000
Mercury — 36,000,000
Saturn — 885,900,000
Venus — 67,200,000

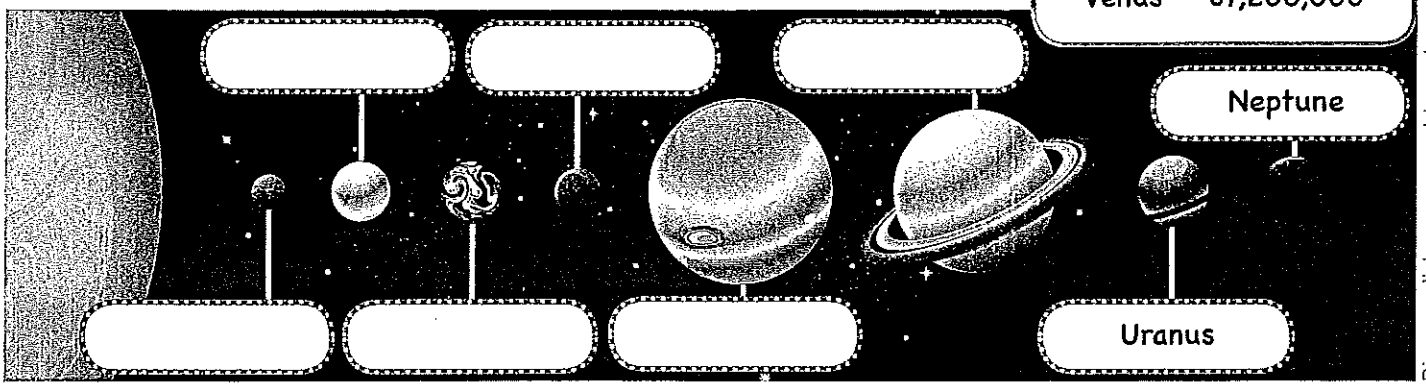


Diagram distances are not to scale.

1 This planet makes a complete revolution around the sun in just 88 days. It has no moons. The average surface temperature is 332°F. Its distance from the sun is **30,000,000 + 6,000,000** miles.

Planet:

2 This planet has 62 moons and is the largest planet in our solar system. Its average surface temperature is −234°F. Its distance from the sun is **four hundred eighty-three million, seven hundred thousand** miles.

Planet:

3 This planet is **ninety-two million, nine hundred sixty thousand** miles from the sun. Its average surface temperature is 59°F. It has one moon and makes a complete revolution around the sun in about 365 days.

Planet:

4 This beautiful planet is known as "the jewel of the solar system." It has 61 moons and is almost 10 times as large as Earth. It is **eight hundred eighty-five million, nine hundred thousand** miles from the sun.

Planet:

5 This planet is **60,000,000 + 7,000,000 + 200,000** miles from the sun. It is almost the same size as Earth, and makes a complete revolution around the sun in about 225 days.

Planet:

6 This planet's day is about 25 hours long, and it takes it about 687 days to revolve once around the sun. It is a little more than half the size of Earth, and has two moons. This planet is **one hundred forty-one million, six hundred thousand** miles from the sun.

Planet:

B-I-N-G-O

For each problem, subtract. Then shade in the box on the bingo board that contains the difference. Five in a row means BINGO! (Yelling "bingo" is up to you.)

900 258	808 −355	880 −136	902 −555	1,001 − 667
008 845	4,824 −1,999	7,007 −2,044	6,400 −3,525	5,006 −2,937
000 066	2,800 −937	8,080 −4,983	9,000 −2,112	3,466 −2,958
000 204	7,700 −3,686	8,220 −1,670	6,005 −3,398	3,626 −2,029

B	I	N	G	O
642	453	2,069	8,000	3,097
1,934	9,000	1,796	4,963	163
6,818	2,825	1,597	508	4,014
9,242	6,888	6,550	744	2,607
347	1,863	334	2,875	1,010

Off to Camp

Camp Tippacanoe is looking forward to a great summer. Solve each problem, using the chart for questions 4–7. Use your answers to complete the joke at the bottom of the page.

	Number Needed	
Food	**July**	**August**
Hot dogs	9,855	9,468
Hamburgers	6,570	6,312
Juice boxes	101,835	97,836
Granola bars	33,945	32,612
Apples	67,890	65,224

1 Camp Tippacanoe has many programs throughout the year, from family weekends to camps for school groups. Last year, a total of 18,768 guests visited the camp. Of those guests, 2,147 attended only the summer resident camp. How many of last year's guests attended other programs?

Answer: ________ **U**

2 Next year, Camp Tippacanoe hopes to have a total of 21,000 guests. How many more guests would that be than the number of guests this year?

Answer: ________ **I**

3 This summer, 101,835 meals will be served to campers during July, and 97,836 meals will be served to campers during August. In all, how many meals will be served to campers during the two months?

Answer: ________ **E**

4 How many more hot dogs are needed for July than August?

Answer: ________ **O**

5 About how many granola bars are needed for the two-month period? Round to the nearest thousand.

Answer: ________ **S**

6 What is the difference between the number of hamburgers needed and the number of apples needed for the two-month period?

Answer: ________ **R**

7 About how many juice boxes are needed for July and August? Round to the nearest thousand.

Answer: ________ **M**

Camper: I just swallowed a fish bone!

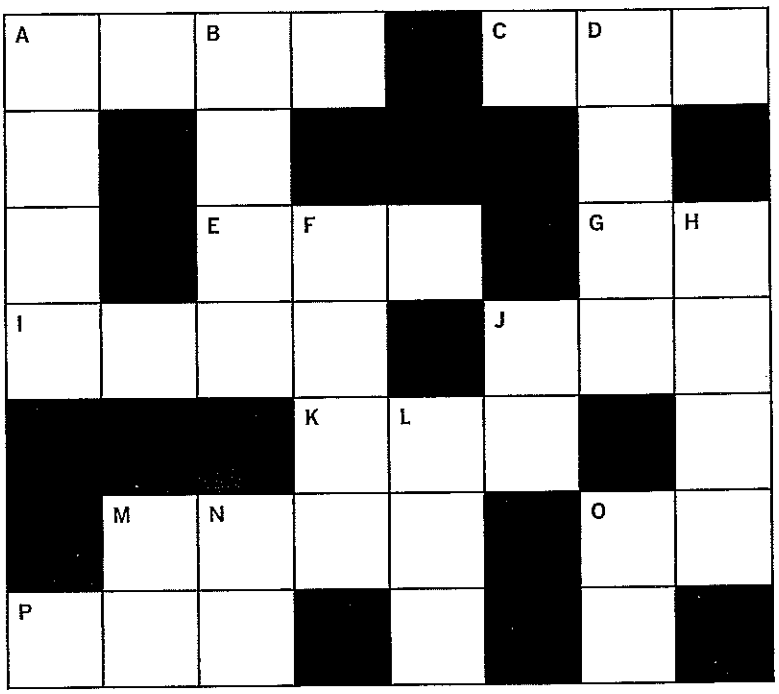
Counselor: Are you choking?

Camper: No, ____ , ____   ____ ____ ____ ____ ____ ____ ____ !

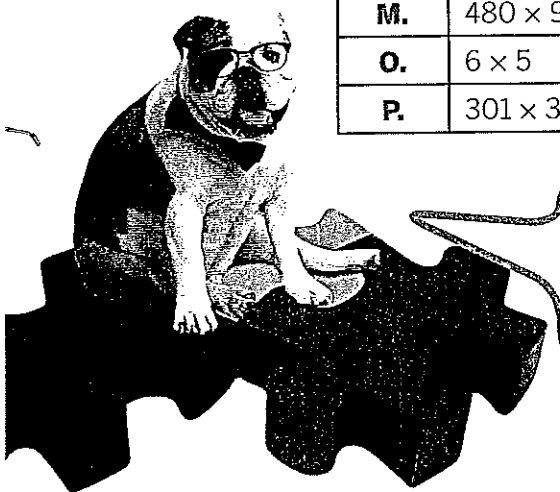
2,232 200,000 67,000 199,671 120,232 2,232 387 16,621 67,000

Product Puzzler

Solve each multiplication problem in the "clues." Write the products in the grid.



Across		Down	
A.	690 × 5	**A.**	617 × 6
C.	21 × 6	**B.**	869 × 6
E.	27 × 5	**D.**	683 × 3
G.	9 × 5	**F.**	1,561 × 2
I.	747 × 3	**H.**	1,086 × 5
J.	99 × 6	**J.**	13 × 4
K.	126 × 2	**L.**	72 × 7
M.	480 × 9	**M.**	5 × 8
O.	6 × 5	**N.**	11 × 3
P.	301 × 3	**O.**	13 × 3



Here's something to "puzzle" over: What goes up and never comes down? *Your age!* Want to hear another one? What gets wetter the more it dries? *A towel!*

Mind Your Manners

To learn some do's and don'ts of polite behavior from around the world, match each set of three factors in the left column to a set of three factors in the right column that has the same product. Write the name of the country on the line.

3 x 4 x 5
When in this country, pick up pieces of cheese with your knife, not your fingers. _____

4 x 6 x 7
It is considered rude to eat while walking in this country. _____

3 x 8 x 9
The most polite way to eat peas in this country is to smash them against the back of your fork. _____

6 x 6 x 5
It is impolite to show the sole of your shoe in this country. _____

7 x 8 x 4
In the southern part of this country, it is common to be 30 minutes late to a social event. In the northern part of the country, it is common to be 15 minutes late. _____

9 x 2 x 6
You should not shake hands over a threshold in this country. Doing so is believed to lead to arguments. _____

2 x 4 x 6
It is rude to arrive early to a dinner party in this country. _____

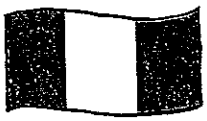
9 x 7 x 4
It is considered rude to eat everything on your plate in this country. Your host will think you didn't get enough to eat. _____

9 x 5 x 6
When giving flowers in this country, give an odd number—but not 13, which is considered unlucky. _____

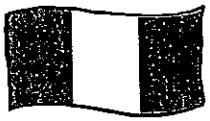
8 x 6 x 6
Don't give too many compliments when you are in this country. It will embarrass people. _____

9 x 6 x 4
United Kingdom

3 x 4 x 4
United States

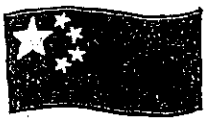


2 x 3 x 10
Italy

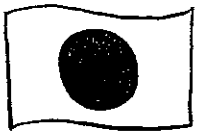


2 x 9 x 15
France

9 x 4 x 8
Germany



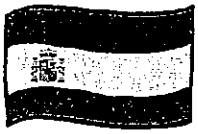
12 x 3 x 7
China



14 x 4 x 3
Japan

3 x 3 x 12
Russia

3 x 5 x 12
Egypt



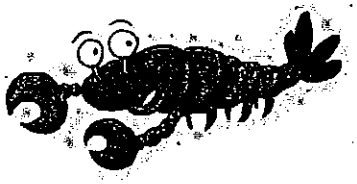
14 x 4 x 4
Spain

Jokes From the Sea

Find each product. Use your answers to complete the joke below.

75 × 15	**L** 786 × 13	**E** 654 × 23	**F** 375 × 12	**I** 269 × 43
412 × 49	**Y** 42 × 35	**R** 379 × 28	**T** 804 × 31	**S** 718 × 36

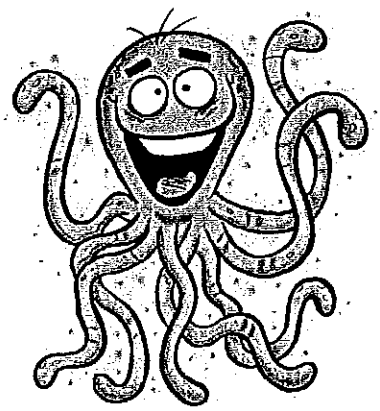
Why don't lobsters share?



24,924	20,188	15,042	1,470		1,125	10,612	15,042	

25,848	20,188	15,042	10,218	10,218	4,500	11,567	25,848	20,188

Here's another one: What do sea monsters eat? *Fish and ships.* Get it? Fish and ships! Ha!



Fun at the State Fair

Circle the correct answer to each division problem about the state fair. Use the letters next to the correct answers to complete the joke at the bottom of the page. We did one for you.

1 Each carriage on the Ferris wheel seats 2 people. How many carriages are needed for the 9 members of the Ramirez family?

4 → l (5 → m)

2 Ride tickets cost $2. Miller has $9. How many ride tickets can he buy?

4 → n 5 → s

3 Ms. Brown wants to buy 19 bars of goat's milk soap. They are sold in packages of 4. How many packages does Ms. Brown need to buy?

4 → t 5 → h

4 Kerry uses 2 feet of ribbon to make one set of prize ribbons for the vegetable competition. How many sets of prize ribbons can Kerry make with 9 feet of ribbon?

4 → k 5 → e

5 State fair baseball caps cost $9. Luis has a $10 bill and a $5 bill. How many baseball caps can he buy?

1 → a 2 → e

6 Amy sells homemade jams in two-jar packs. How many packs can Amy make with 13 jars?

6 → p 7 → t

7 In the Fiddlers' Contest, each fiddler can play for 4 minutes. If each fiddler plays for a full 4 minutes, how many different fiddlers can play in 30 minutes?

7 → c 8 → g

8 A fried-pickle-on-a-stick costs $3. Hugo has $12. If Hugo buys 1 cheese-on-a-stick for $4, how many pickles-on-a-stick can he buy?

2 → u 3 → t

Susan Chapman planned to enter her giant pumpkin in the vegetable contest. On the way to the fair, it cracked. How did she fix it?

With a _____ _____ m _____ _____ _____ **i** _____

6 8 1 6 4 2

_____ _____ **t** _____ _____ **!**

6 5 7 3

The Size of the Statue

Solve the division problems. Each quotient represents the number of feet in the length or height of a particular part of the Statue of Liberty. The letter next to each problem tells you on which label to write the problem's quotient. We did one for you.

L. $2\overline{)610}$ — 305; −6; 01; −0; 10; −10; 0

B. $4\overline{)604}$

E. $6\overline{)252}$

D. $9\overline{)144}$

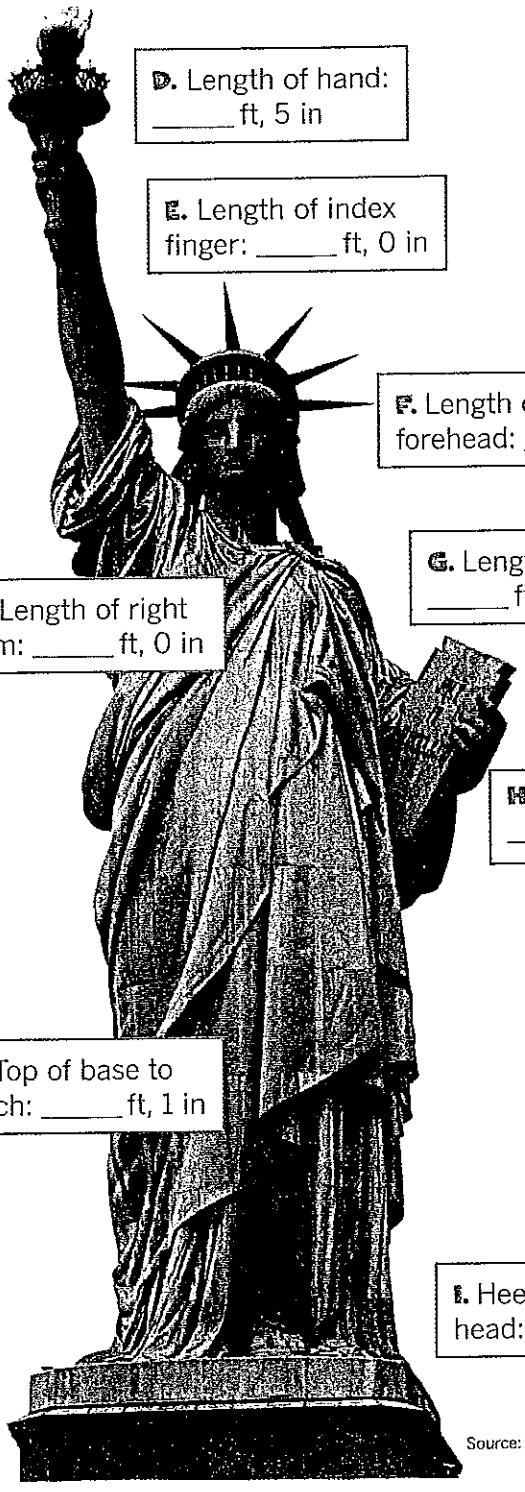
E. $9\overline{)72}$

F. $5\overline{)85}$

G. $7\overline{)161}$

H. $8\overline{)104}$

I. $8\overline{)888}$



A. Ground to tip of torch: 305 ft, 1 in

B. Top of base to torch: _____ ft, 1 in

C. Length of right arm: _____ ft, 0 in

D. Length of hand: _____ ft, 5 in

E. Length of index finger: _____ ft, 0 in

F. Length of chin to forehead: _____ ft, 3 in

G. Length of tablet: _____ ft, 7 in

H. Width of tablet: _____ ft, 7 in

I. Heel to top of head: _____ ft, 1 in

Source: The National Park Service

On the Boardwalk

The chart below provides information about the rides at the Sea City Boardwalk. Use the chart to answer the questions. We did the first one for you.

Ride	Price per Ride	Riders on Saturday	Riders on Sunday
Cosmic Coaster	$4	9,876	7,523
Rip Curl	$4	6,042	4,896
Lava Flow	$4	6,764	4,321
Haunted Pirate Ship	$3	720	602
Wild Shark	$3	926	797
Seahorse	$3	7,014	6,916
Rock Lobster	$2	5,022	3,843
Mermaid Shells	$2	678	588
Sky Wheel	$2	5,847	4,995

1 How much money did the Cosmic Coaster collect on Saturday?

(Multiply the cost per ride by the number of riders on Saturday.)

9,876
x $4
$39,504

Answer: $39,504

2 How much money did the Seahorse collect on Sunday?

Answer:

3 How much more money did the Rip Curl collect on Saturday than Sunday?

Answer:

4 How much less money did the Seahorse collect on Sunday than Saturday?

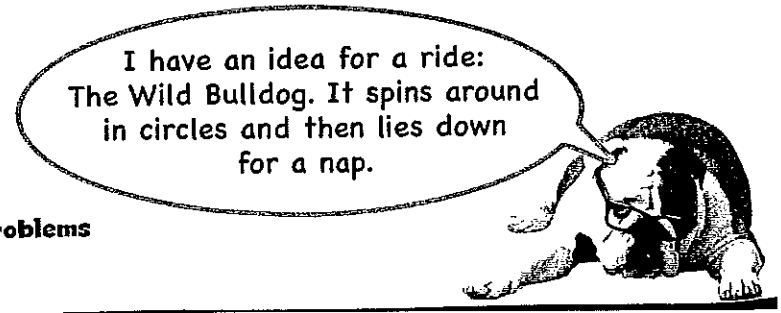
Answer:

5 What was the total weekend income for the Wild Shark?

Answer:

6 What was the total weekend income for the Sky Wheel?

Answer:



7 Twice as many tickets for the Rip Curl were sold on Saturday than on Monday. How many Rip Curl tickets were sold on Monday?

Answer:

8 Three times as many tickets were sold for Rock Lobster on Sunday than Friday. How many Rock Lobster tickets were sold on Friday?

Answer:

9 On which weekend day was the total number of tickets sold greater? Use estimation to find your answer.

Answer:

10 What was the approximate difference in ticket sales between Saturday and Sunday? Round your answer to the nearest thousand.

Answer:

11 Describe how you would estimate the total income from rides for one week.

Tangram Tangler

A *tangram* is a Chinese puzzle made up of 7 polygons, called tans. The tans are put together to form shapes. Before you try your hand at the tangram, answer the questions below, about the tans on page 15.

1 Which figure is congruent to Figure A?
Figure ___

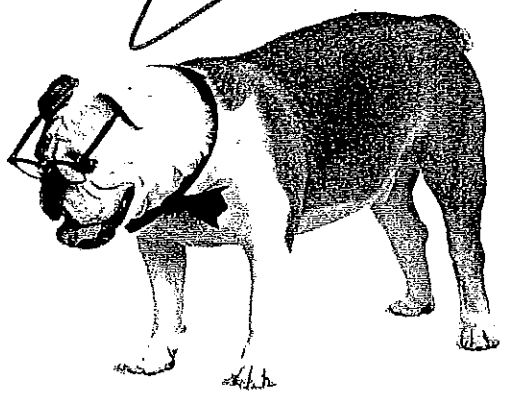
2 Which figure is congruent to Figure G?
Figure ___

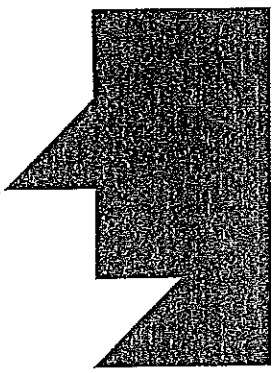
3 Name two figures that combine to be congruent to Figure C.
Figures ___ and ___

4 Name two ways to combine three figures to be congruent to Figure F.
Figures ___, ___, and ___;
Figures ___, ___, and ___

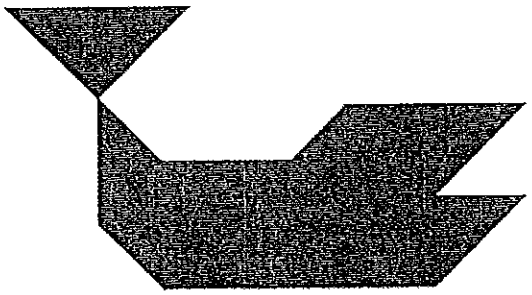
5 Name two figures that combine to be congruent to Figure E.
Figures ___ and ___

Now trace the tans onto another sheet of paper.* Label the tans A–G and cut them out. Then see if you can use the tans to form each shape below. You must use all 7 tans and no tans may overlap. Once you've made a shape, show your solution on the image of the shape, below. (Draw and label the tans to show their positions.) Have fun—I know you'll do a *tan*tastic job!

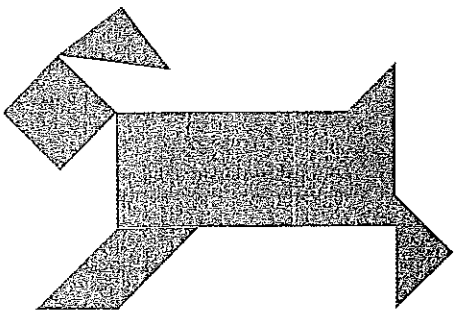




laughing man

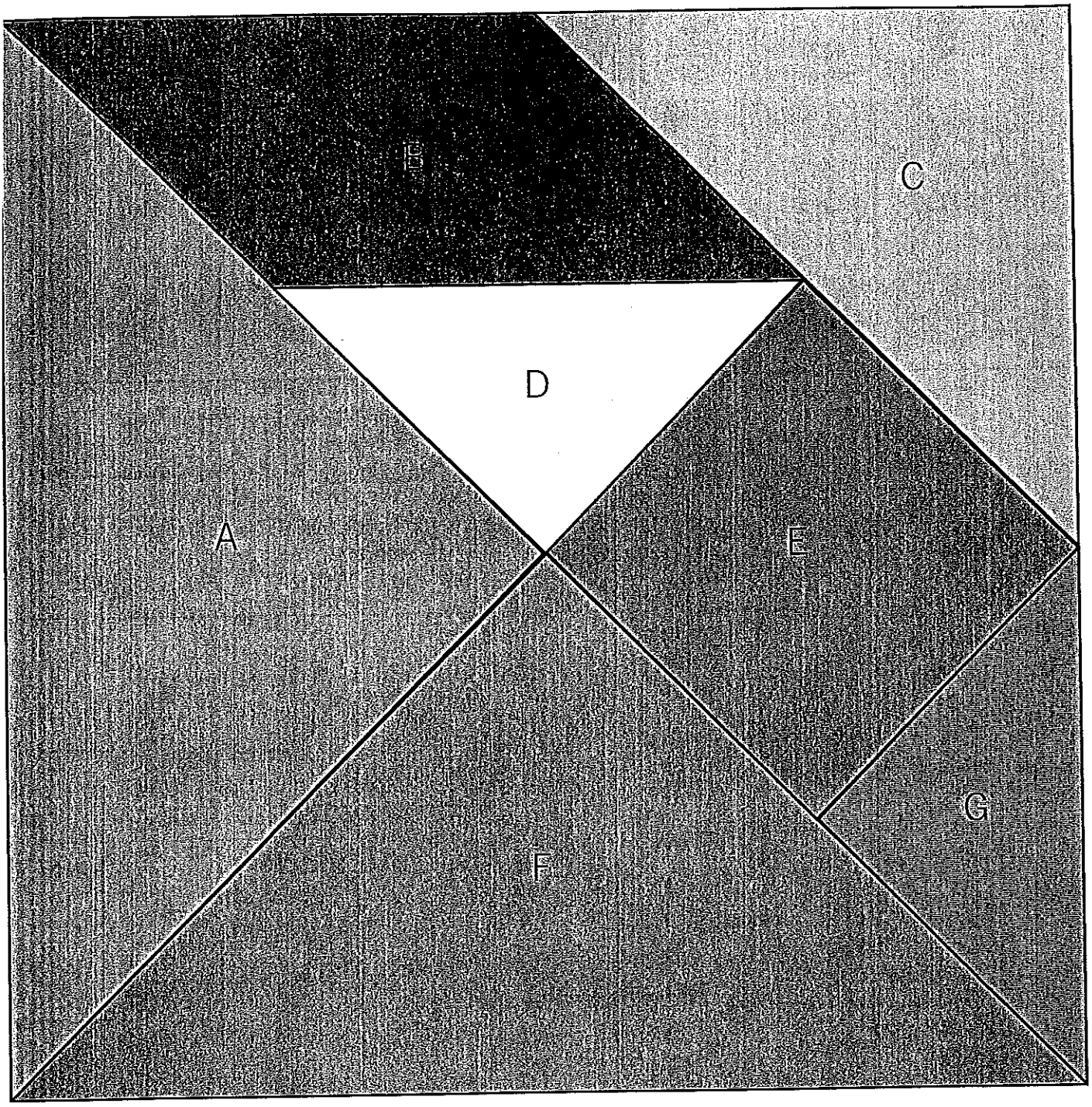


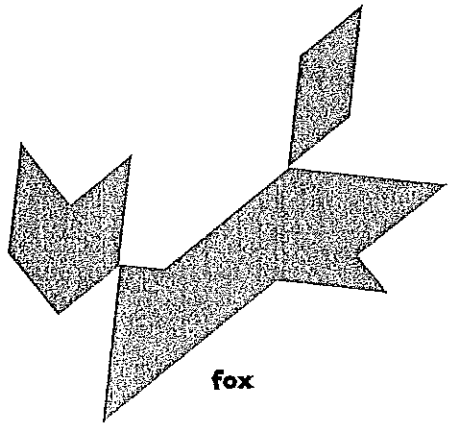
whale



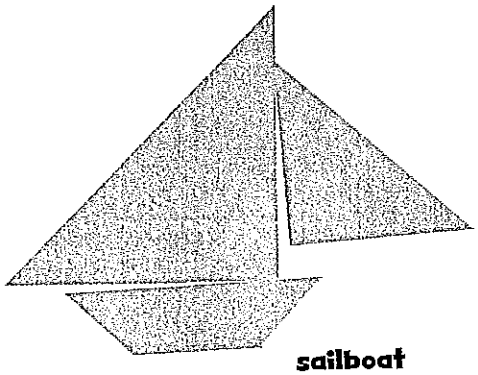
dog

* Or, your teacher can print the tans at www.scholastic.com/mustknowmath.





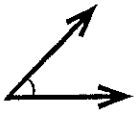
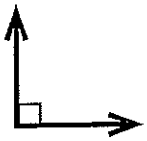
fox

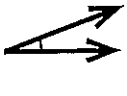


sailboat

Name That Angle

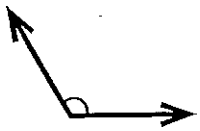
Classify each angle as *acute*, *right*, *obtuse*, or *straight*. Then decide which of the measurements in the yellow ovals appears to be the most accurate measure for that angle. Write the word that goes with the angle on the blank above the oval. You'll discover a riddle. We did one for you.

			
Acute angles measure between 0° and 90°.	Right angles measure exactly 90°.	Obtuse angles measure between 90° and 180°.	Straight angles measure exactly 180°.

1 

Type: acute

FOR

2 

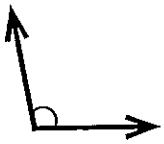
Type:

IS

3 

Type:

IN

4 

Type:

PACKED

5 

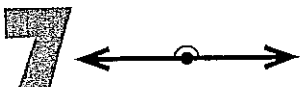
Type:

HOW

6 

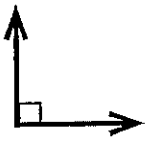
Type:

ASTRONAUTS

7 

Type:

MEDICINE

8 

Type:

SPACE

9 

Type:

CAPSULES

85° 120° 180° 100°

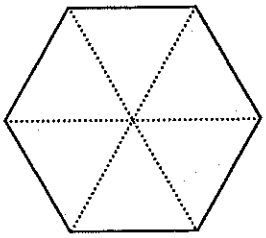
FOR ? .

20° 40° 70° 90° 150°

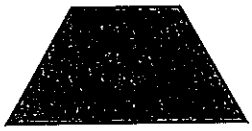
Pieces and Parts

Answer the questions below about parts of a whole.

This is one whole.

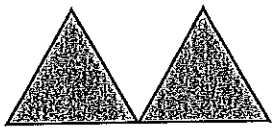


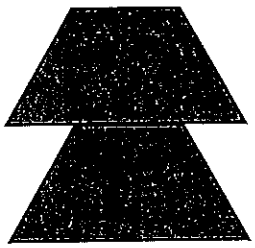
What fraction of the whole is each piece?

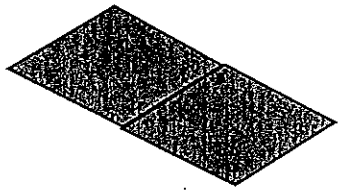


_____ _____ _____

What fraction of the whole is each pair of pieces?

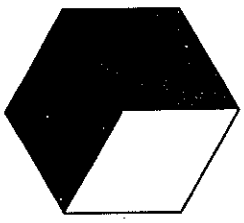


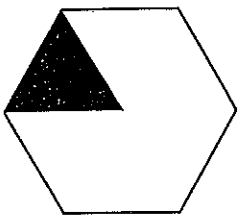


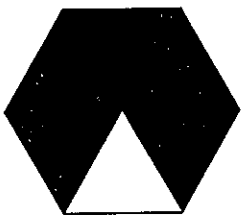


_____ _____ _____

What fraction of the whole is each purple area?





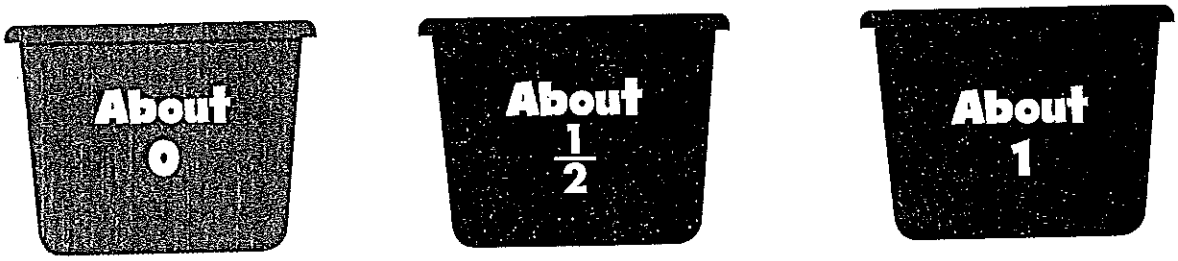


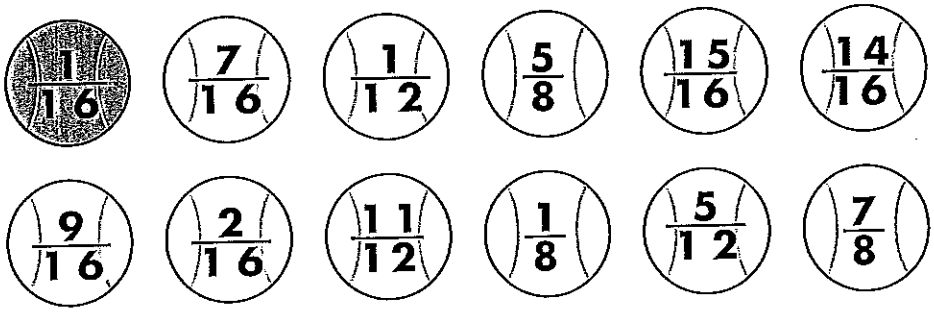
_____ _____ _____

Notice anything different? I've been working on getting in shape.

In the Bin

The tennis balls below are labeled with fractions. Balls with fractions that are about equal to 0 go in the orange bin, balls with fractions that are about equal to $\frac{1}{2}$ go in the red bin, and balls with fractions that are about equal to 1 go in the blue bin. Color each ball the same color as the bin to which it belongs. We did one for you.





Now write each set of fractions in order from least to greatest. You can use the colors of the balls to help you.

$\frac{5}{12}$ $\frac{7}{8}$ $\frac{2}{16}$ ___ ___ ___	$\frac{11}{12}$ $\frac{7}{16}$ $\frac{1}{8}$ ___ ___ ___	$\frac{9}{16}$ $\frac{1}{8}$ $\frac{15}{16}$ ___ ___ ___
$\frac{5}{8}$ $\frac{1}{12}$ $\frac{14}{16}$ ___ ___ ___	$\frac{1}{16}$ $\frac{7}{8}$ $\frac{9}{16}$ ___ ___ ___	$\frac{15}{16}$ $\frac{1}{12}$ $\frac{5}{12}$ ___ ___ ___

One of These Things Is Not Like the Others

In each row, one representation does not belong with the others. Cross it out and circle the letter beneath it. Use the circled letters to answer the question at the bottom of the page. We did one for you.

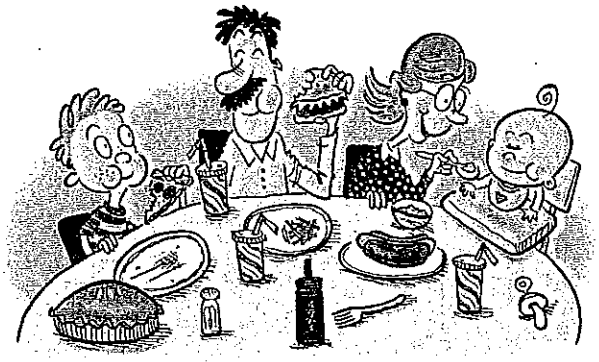
	Decimal	Fraction	Simplified Fraction	Name
1.	0.63 **K**	$\frac{63}{100}$ **L**	~~$\frac{6}{10}$~~ **(M)**	sixty-three hundredths **N**
2.	0.05 **N**	$\frac{5}{10}$ **O**	$\frac{1}{2}$ **P**	five tenths **Q**
3.	0.75 **D**	$\frac{75}{10}$ **E**	$\frac{3}{4}$ **F**	seventy-five hundredths **C**
4.	0.8 **D**	$\frac{8}{10}$ **E**	$\frac{8}{100}$ **C**	eight tenths **G**
5.	0.15 **O**	$\frac{15}{100}$ **P**	$\frac{3}{20}$ **Q**	fifty-one hundredths **R**
6.	0.9 **N**	$\frac{99}{100}$ **O**	$\frac{9}{10}$ **P**	nine tenths **Q**
7.	0.01 **F**	$\frac{1}{100}$ **G**	$\frac{1}{10}$ **H**	one hundredth **I**
8.	0.01 **I**	$\frac{10}{100}$ **J**	$\frac{1}{10}$ **K**	one tenth **L**
9.	0.09 **I**	$\frac{9}{10}$ **P**	$\frac{9}{100}$ **K**	nine hundredths **L**

What sound instrument did British scientist Charles Wheatstone invent in 1827?

The	M									
	1	8	4	5	6	9	7	6	2	3

Welcome to the Olde Tyme Restaurant

Draw pictures to compare fractions and solve the problems about the Olde Tyme Restaurant. We started the first one for you.



1 Ray and Deb both ordered small pizzas. Ray cut his pizza into fourths. Deb cut hers into eighths. Ray ate 2 pieces. Deb ate 3 pieces. Who ate more pizza?

Answer:

2 The Rice family bought an apple pie and a cherry pie. They ate $\frac{1}{3}$ of the apple pie on Wednesday, and $\frac{2}{4}$ of the cherry pie on Thursday. Did they eat more of the apple pie or the cherry pie?

Answer:

3 Juan served a table of 16 customers. One fourth of the customers ordered hot dogs and $\frac{1}{2}$ ordered hamburgers. How many of the customers ordered something other than hot dogs or hamburgers?

Answer:

4 Mr. Glenny ate a sandwich that was $\frac{1}{3}$ turkey, $\frac{1}{2}$ ham, and $\frac{1}{6}$ roast beef. Of which kind of meat was there the most?

Answer:

5 Mr. Rodriguez is the baker at Olde Tyme Restaurant. It takes him $\frac{1}{3}$ of an hour to bake brownies. It takes him $\frac{1}{2}$ hour to bake cookies. Which takes longer to bake, brownies or cookies?

Answer:

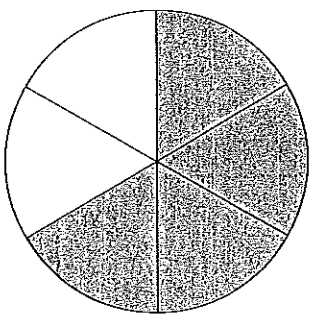
6 Miller, Ben, and Sabrina ordered a total of 3 grilled cheese sandwiches. Each person got 1 sandwich. What fraction of the sandwiches did Miller eat?

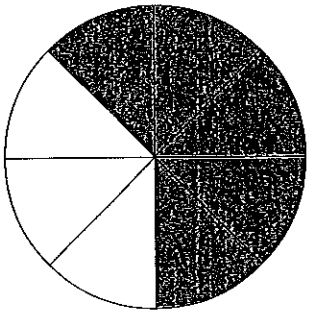
Answer:

Sabrina cut her sandwich in half. She ate both pieces. What fraction of the total number of sandwiches did Sabrina eat? Write your answer in lowest terms.

Answer:

7 Now write your own problem about the Olde Tyme Restaurant. Use the two fractions pictured below in your problem. After you write your problem, solve it.





Answer:

A Good Clean Joke

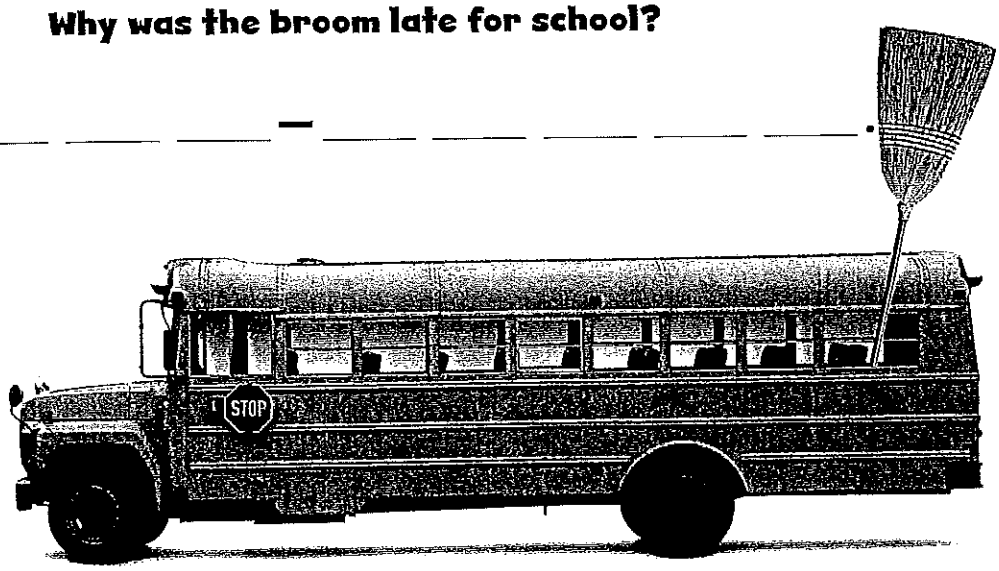
For each group of four numbers, draw arrows to show the numbers in order from least to greatest. Circle the greatest number in the group. We did the first one for you.

1 N 2.35 ↓ 3.25 P →	(E 5.32) ↑ 3.52 R	
2 R $\frac{1}{8}$ $\frac{1}{10}$ I	U $\frac{1}{5}$ $\frac{1}{2}$ O	
3 M $1\frac{2}{5}$ 1.36 N	L 1.5 1.6 E	
4 W 4.1 4.01 R	X 3.89 4.09 O	
5 H $\frac{1}{8}$ $\frac{1}{4}$ S	E $\frac{1}{5}$ $\frac{5}{8}$ V	
6 O 2.5 2.6 R	S 2.3 2 A	
7 E 3.1 $3\frac{1}{2}$ S	N 3.4 3.49 U	
8 G 9.2 10 T	E 9.25 9.0 P	
9 W $5\frac{1}{4}$ $4\frac{2}{3}$ X	P $5\frac{1}{2}$ $5\frac{1}{3}$ M	

Now write the circled numbers below each blank line in the riddle in order from least to greatest. Then use the letters that match each number to spell out the answer to the riddle.

Why was the broom late for school?

It _____ _____ _____ _____ — _____ _____ _____ _____ _____ _____.



Pattern Place

Solve each problem. Then use the coordinates to copy your answers into the grid. (We did coordinate A2 for you.) Study the grid to find the pattern and fill in the missing numbers.

A2	$\overset{1\ 1}{6.78}$ $+\ 8.47$ 15.25	**D4**	21.42 $-\ 2.67$	**A1**	6.97 $+\ 8.03$	**A4**	23.41 -7.66	**B1**	29.47 $-\ 13.47$
D2	9.52 $+\ 8.73$	**B3**	31.37 $-\ 14.87$	**C1**	15.11 $+\ 1.89$	**A3**	20.00 $-\ 4.5$	**C2**	42.9 $-\ 25.65$

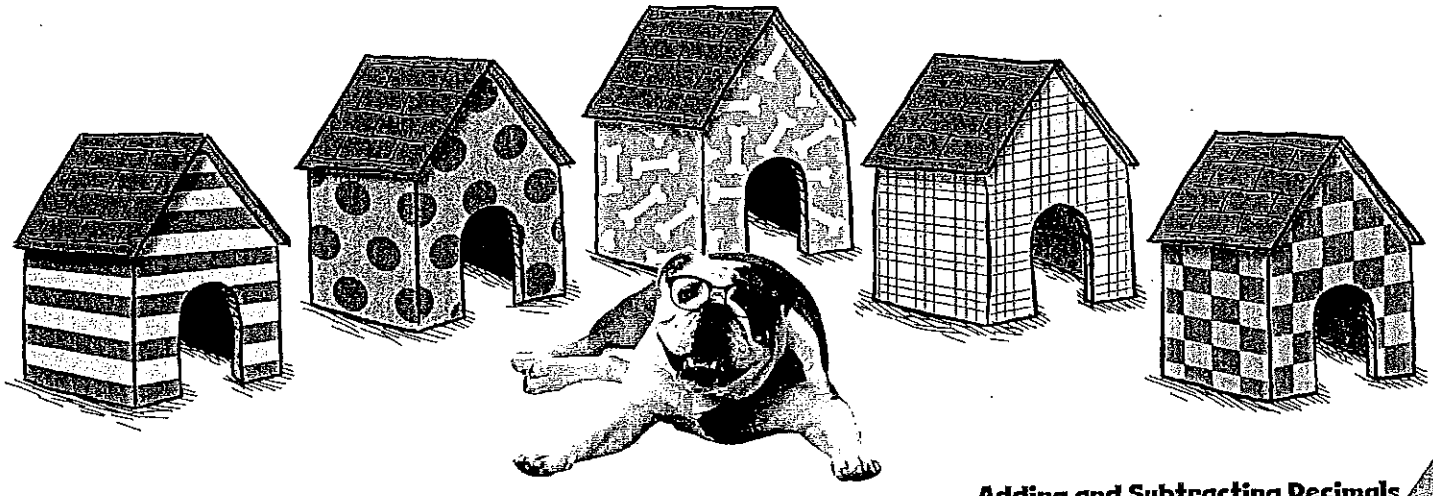
	1	2	3	4
A		15.25		
B				
C				
D				

What pattern did you find moving from left to right?

_____

What pattern did you find moving from top to bottom?

_____

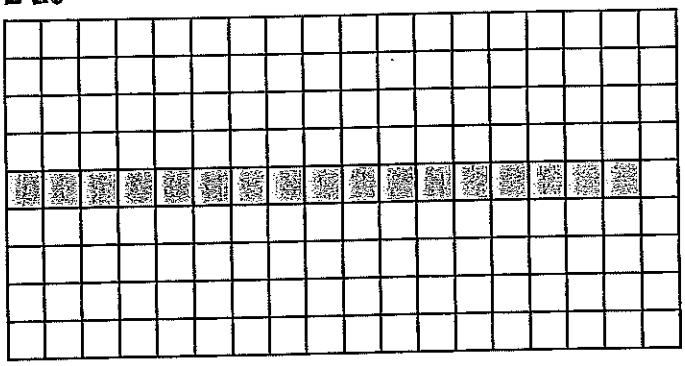


Fred's Fence

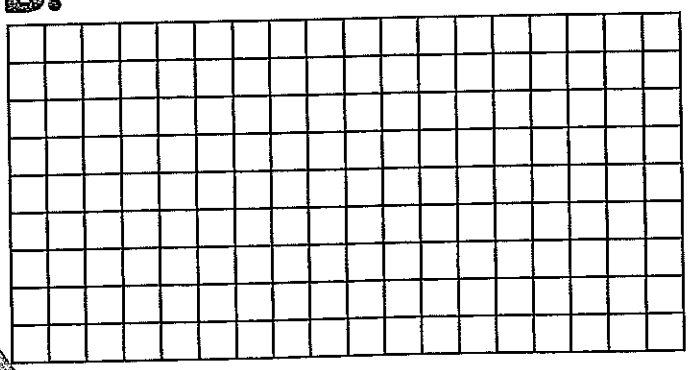
Farmer Fred is going to plant a flower garden. He has a plot of land that is 18 feet long by 9 feet wide, and he has 36 feet of fencing to put around the garden. There are 9 different rectangular shapes with perimeters of 36 feet that Farmer Fred could use. Show one of them in each of the grids (A through I) below. We did one for you.

☐ = 1 square foot

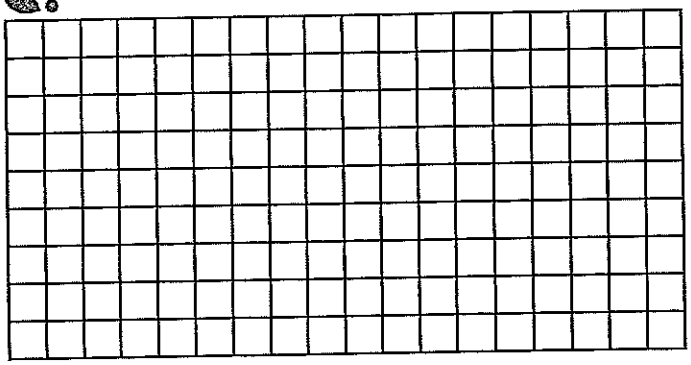
A.



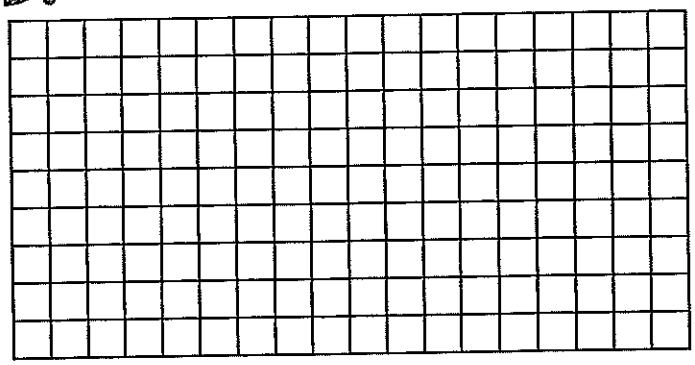
B.



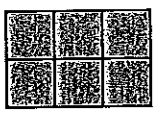
C.



D.

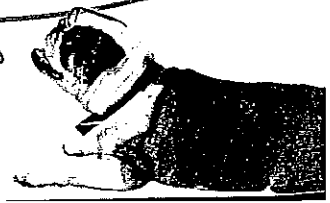


Remember:
area = length x width, and it is measured in square units. Perimeter = the sum of the lengths of all sides. For example:

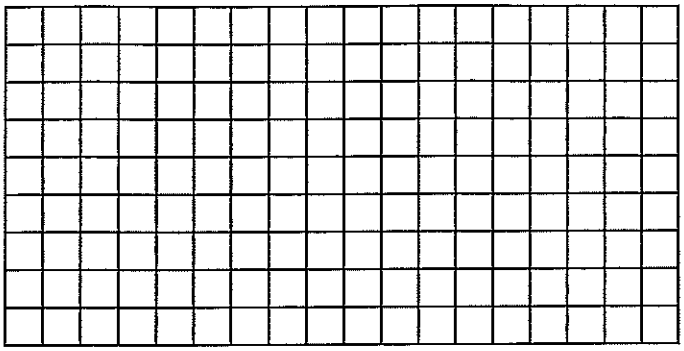


Area = 3 ft x 2 ft
= 6 sq ft

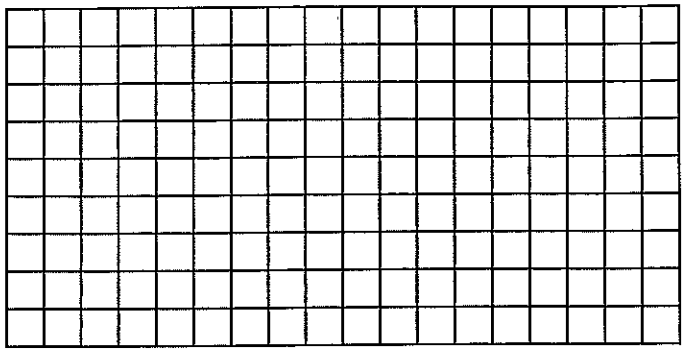
Perimeter = 3 ft + 3 ft + 2 ft + 2 ft
= 10 ft



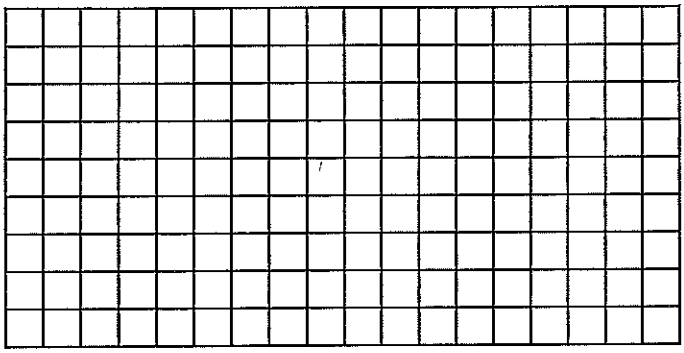
E.



I.



F.



Find the area that each garden would have.

A: 17 square feet **F:** _____

B: _____ **G:** _____

C: _____ **H:** _____

D: _____ **I:** _____

E: _____

Farmer Fred wants his garden to be as large as possible. Which shape should he use? Explain why you think so.

_____

_____

_____

_____

_____

_____

_____

_____

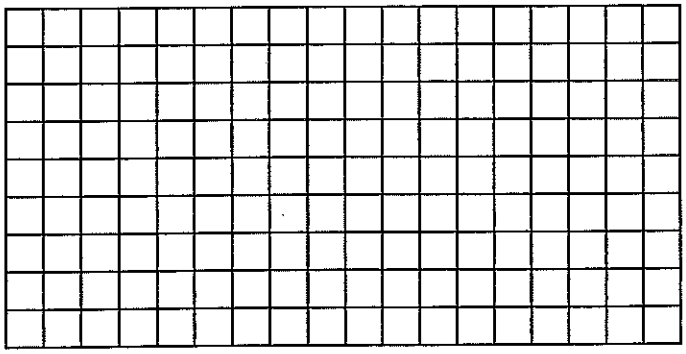
_____

_____

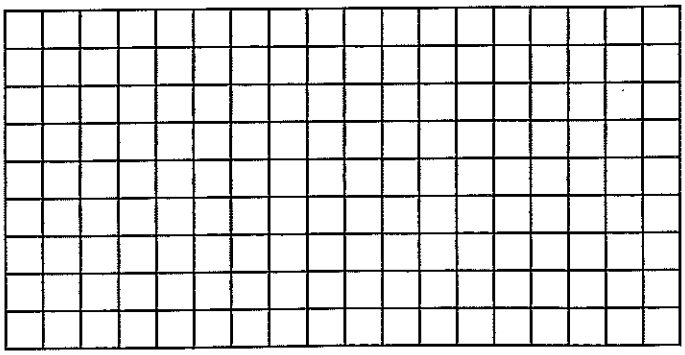
_____

_____

G.



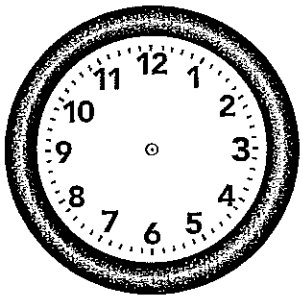
H.



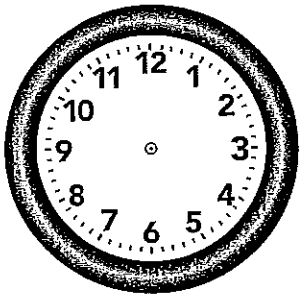
Stormy Night

C-r-r-a-c-k! **A tremendous thunderbolt shook the night sky. Then, all was silent and dark—because the power had gone out. All of the clocks in the neighborhood stopped at 9:32 p.m. They restarted at different times, as the power returned. Read how long the power was out in each of the households listed below. Draw hands on each family's clock to reset it to the correct time at the moment the power returned.**

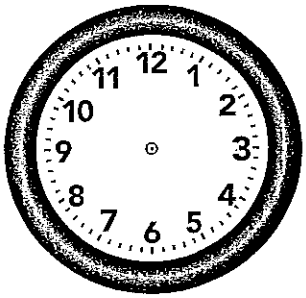
Patel Home
Power out for 2 hours



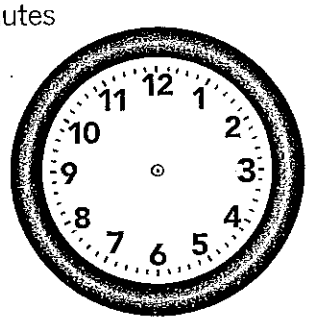
Fleming Home
Power out for 23 minutes



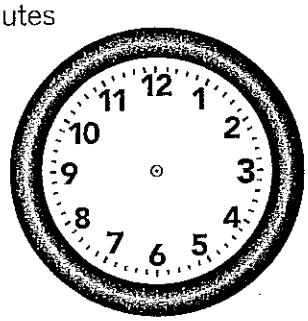
Boyer Home
Power out for 45 minutes



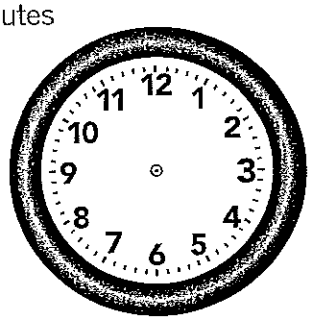
Hammer Home
Power out for 1 hour and 12 minutes



Nguyen Home
Power out for 2 hours and 38 minutes



Weiss Home
Power out for 5 hours and 17 minutes



When the power returned to Town Hall, no one was there to reset it. The next morning, the clock said 7:14, but it was really 8:49. How long was the power out at Town Hall?

Answer:

Your Reading Rate

What is your reading rate? When you finish this activity, you'll know! Just follow the steps below. You will need a partner and a book to complete this activity. (Pick a good book—your partner is going to listen to you read it!)

PART 1

1 Choose a spot in your book to begin reading. Lightly mark the spot with a pencil.

2 Have your partner time you as you read silently for one minute. Read at your normal speed.

3 Use a pencil to lightly mark the place you stop reading.

4 Choose a different spot in your book. Repeat steps 1–3, but this time, read aloud. (Your partner must be careful not to get so interested in your reading that he or she forgets to watch the clock!)

5 Repeat steps 1–4, but switch roles with your partner.

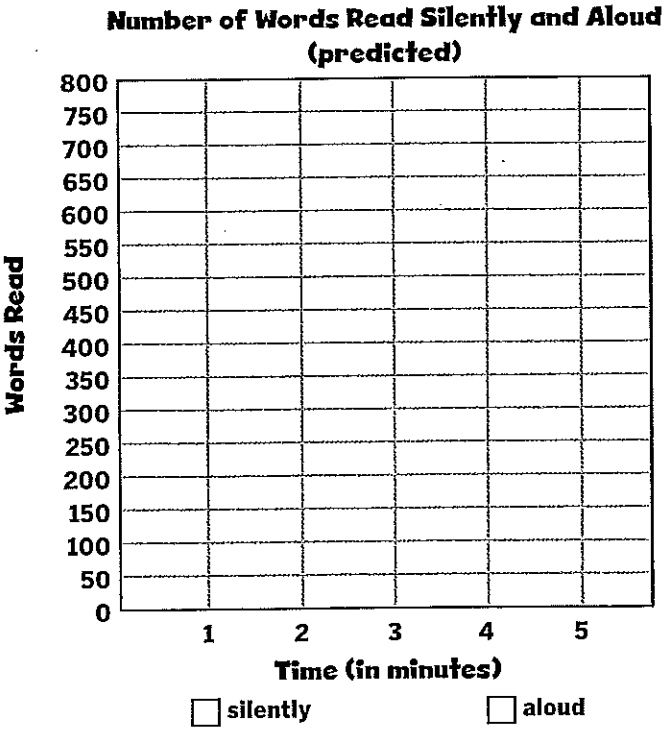
Number of Words Read Silently and Aloud		
	Silently	**Aloud**
1 minute (actual)		
2 minutes (predicted)		
3 minutes (predicted)		
4 minutes (predicted)		
5 minutes (predicted)		

PART 2

6 Count the number of words that you read silently and that you read aloud. Record your results in the first row of the left-hand table below.

7 Using your results, predict the number of words you will read silently and aloud in 2, 3, 4, and 5 minutes. Fill in the table with your predictions.

8 On the grid provided, use data from your table to create a double-line graph showing the number of words you predict reading in 1, 2, 3, 4, and 5 minutes. Use one color for silent reading and one color for reading aloud. Fill in the key to show what each color represents.

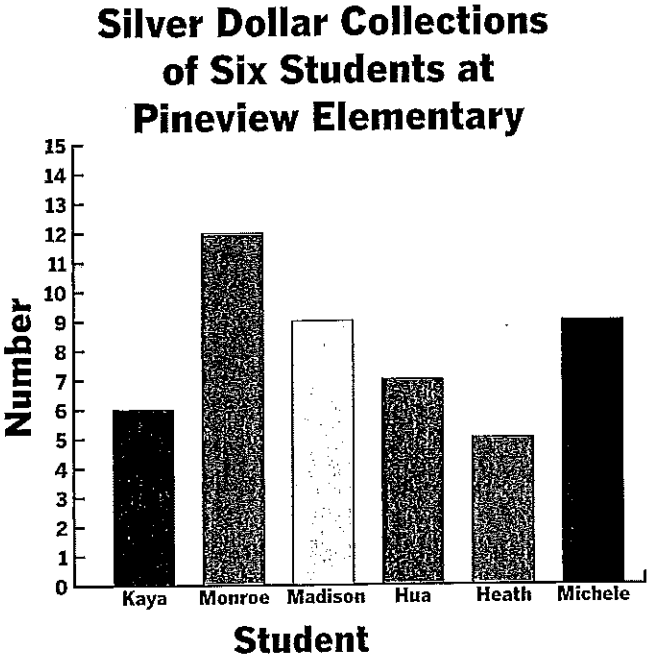


9 Now read aloud for 5 minutes. How close was your estimate?

Answer:

Silver Dollars

Six students at Pineview Elementary collect silver dollars. The bar graph below shows how many each student has. Use the bar graph to answer the questions.



1 What is the range of the silver dollar collections?

Answer:

2 What is the mode of the silver dollar collections?

Answer:

3 What is the median of the silver dollar collections?

Answer:

4 What is the mean of the silver dollar collections?

Answer:

5 Imagine that you gave one student 3 more silver dollars. Extend his or her bar on the graph to show this change.
To whom did you give additional silver dollars?

Name:

How many silver dollars does that student have now?

Answer:

6 What is the new range, mode, median, and mean of the silver dollar collections?

Range: **Mode:**

Median: **Mean:**

Remember:
The range is the difference between the greatest and least numbers in a set of data.
The mode is the number or numbers that occur most often in a set of data.
The median is the middle number when data are arranged in order. (Find the value halfway between the two middle numbers when there are an even amount of numbers.)
The mean is the number found by dividing the sum of the numbers in a group by the number of addends.

Big Bills

Complete the patterns below to learn who is pictured on some large denominations of American currency. (That's a fancy way to say "dollar bills with large values in the United States' money system.") These large denominations were once printed by the United States Treasury. We did one for you.

1 25, 50, 75, 100

Benjamin Franklin is on the $ 100 bill.

2 500,000, 50,000, 5,000, _____

William McKinley is on the $ _____ bill.

3 4,000, 3,000, 2,000, _____

Grover Cleveland is on the $ _____ bill.

4 5, 50, 500, _____

James Madison is on the $ _____ bill.

5 80,000, 40,000, 20,000, _____

Salmon P. Chase is on the $ _____ bill.

6 200,000, 150,000, _____, 50,000

Woodrow Wilson is on the $ _____ bill.

"But wait!" you're saying, "I've never seen a $10,000 bill!" Well, the U.S. Treasury stopped printing $500, $1,000, $5,000, and $10,000 bills during World War II, and stopped giving them out in 1969. The bills are still legal currency, but the Treasury destroys any that it receives. The $100,000 bills were printed only during a period of about a month at the end of 1935. They were used only for official transactions between federal banks. They were never available to the general public. It's kind of fun to think about what you could do with one, though, isn't it?

Fun in the Sun

Write and solve equations with the variables provided. At the bottom of the page, write the variables above their values to discover a fact about the sun. We did the first one for you.

1 Campbell found 19 seashells, which is 5 more than Merri found. Let m equal the number of seashells Merri found.

Answer: $m = 19 - 5$ $m = 14$

2 Lisa has 14 freckles on her nose. This is 4 fewer than Ethan has on his nose. Let e equal the number of freckles Ethan has on his nose.

Answer: $e =$

3 Jim has 4 sandwiches in his cooler. Tommy has twice as many sandwiches in his cooler. Let t equal the number of sandwiches Tommy has.

Answer: $t =$

4 Hannah is 3 times as old as her brother, Jay. Jay is 5 years old. Let h equal Hannah's age.

Answer: $h =$

5 The Greenes have 11 sand toys. They have 3 pails and 2 cups. The rest are shovels. Let g equal the number of shovels the Greenes have.

Answer: $g =$

6 The frozen-treat vendor sold 10 popsicles, 5 fudge bars, and some nutty cones. He sold 22 desserts in all. Let n equal the number of nutty cones sold.

Answer: $n =$

A variable is a letter or symbol used to represent an unknown number. To solve an equation with a variable, you need to find a value for the variable that makes the equation true.

7 Ian swam 3 times as long as Drew did. Drew swam for 9 minutes. Let i equal the number of minutes Ian swam.

Answer: $i =$

8 Gina invited 12 people to her beach party. Eight guests did not use beach umbrellas. The rest of the guests did use umbrellas. Let u equal the number of guests who used umbrellas.

Answer: $u =$

9 Between 1 p.m. and 2 p.m., Tanya spent 40 minutes playing volleyball. She spent the rest of the hour reading. Let s equal the number of minutes Tanya spent reading.

Answer: $s =$

To reach the Earth, it takes the sun's light about

	18	27	6	15	8	
m						
14	27	7	4	8	18	20

Take Your Chances

Imagine that letter tiles for the word MISSISSIPPI are in a small bag. What are the chances that if you reach in, you will pull out any given letter? Use the letter diagram to help you fill in the chart below it. State whether each event is *certain*, *likely*, *equally likely*, *unlikely*, or *impossible*. Then name the fractional probability of each event. We filled in the first row for you.

Event: You pick...	Likelihood	Fractional Probability
the letter *M*	unlikely	$\frac{1}{11}$
the letter *H*		
a vowel		
a consonant		
an *S* or a *P*		
an *M*, *S*, *P*, or *I*		

Name two events that have the same probability.

_____

Write any 4-letter word in which all the letters would have an equal probability of being drawn.

_____ _____ _____ _____