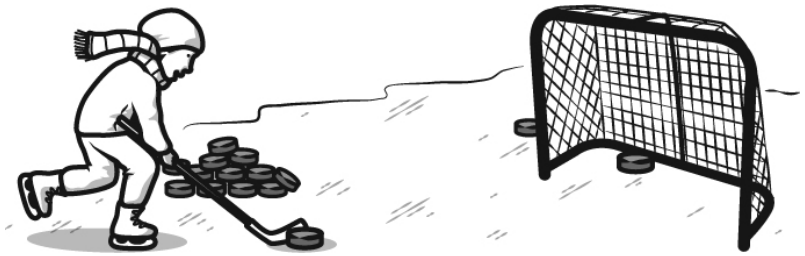
16	-5		$+\frac{1}{8}$		+18		+25		$+\frac{1}{2}$	

Name: _____

Pick 27 to do: Skip 2 pages.

☐ page 1	☐ page 7	☐ page 13	☐ page 19	☐ page 25
☐ page 2	☐ page 8	☐ page 14	☐ page 20	☐ page 26
☐ page 3	☐ page 9	☐ page 15	☐ page 21	☐ page 27
☐ page 4	☐ page 10	☐ page 16	☐ page 22	☐ page 28
☐ page 5	☐ page 11	☐ page 17	☐ page 23	☐ page 29
☐ page 6	☐ page 12	☐ page 18	☐ page 24	

Challenge Math
Book 24



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: 17.4, 22.4, or 28.6.

The other three numbers have to all be DIFFERENT and must be from these: 9.8, 5.6, 2.7, 8.7, 7.2, or 1.1.

	8.7		7.2					
					even			
9.8	41.5	5.6	40	9.8	31		43.1	
				less than 17.4		either 17.4 or 2.7		
	17.4						8.7	
			either 5.6 or 17.4					
	33.9		29.9		32.8		43.1	

-6 $\frac{5}{8}$										
70 $\frac{31}{40}$										-36
+9 $\frac{1}{2}$										$+\frac{1}{2}$
+12										+17
-8										$+\frac{2}{10}$
$-\frac{1}{2}$										+50
										68 $\frac{7}{10}$
+53										-3 $\frac{1}{10}$

	$+\frac{3}{10}$		+2 $\frac{3}{8}$		+7		$+\frac{1}{2}$		-35	

Name: _____

Samantha collects squishies. "I love em!" she says to her friend Jen.
"Me, too," replies Jen. "Check out my new Mochi Squishies. They come in blue, red, and tickle-me-pink."
"Seriously? Tickle-me-pink is a color?" asks Samanta.
"It is! But it was the most expensive to buy."
"How much?" asks Jen.
"Well, I got one blue squishy and two red squishies for 55 cents.
Then I got one tickle-me-pink squishy and two blue squishies for 85 cents.
Oh yeah, I also got one red squishy and two tickle-me-pink squishies. That was 85 cents, also.
If you can guess how much the tickle-me-pink cost me, I'll GIVE it to you!"

Please show how you found your answer. You really want that tickle-me-pink squishy. It's soooooooo cute!

Name: _____

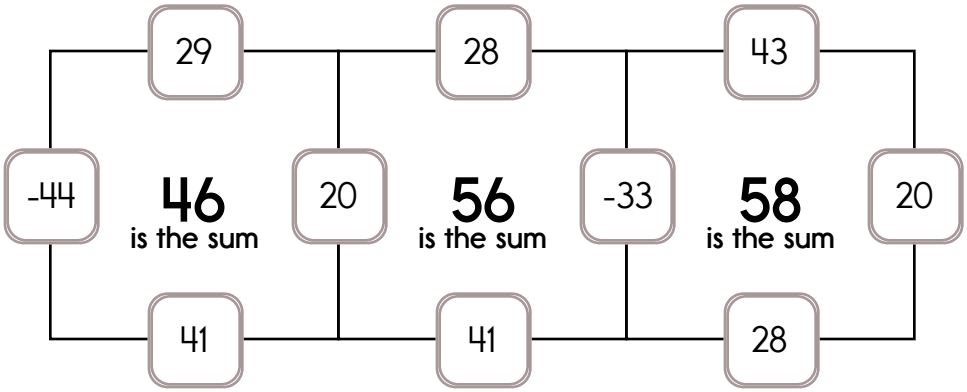
Mental break. Time to use a pencil for this more challenging page. Good luck!

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

Example:
(-44) + 20 + 29 + 41 = 46

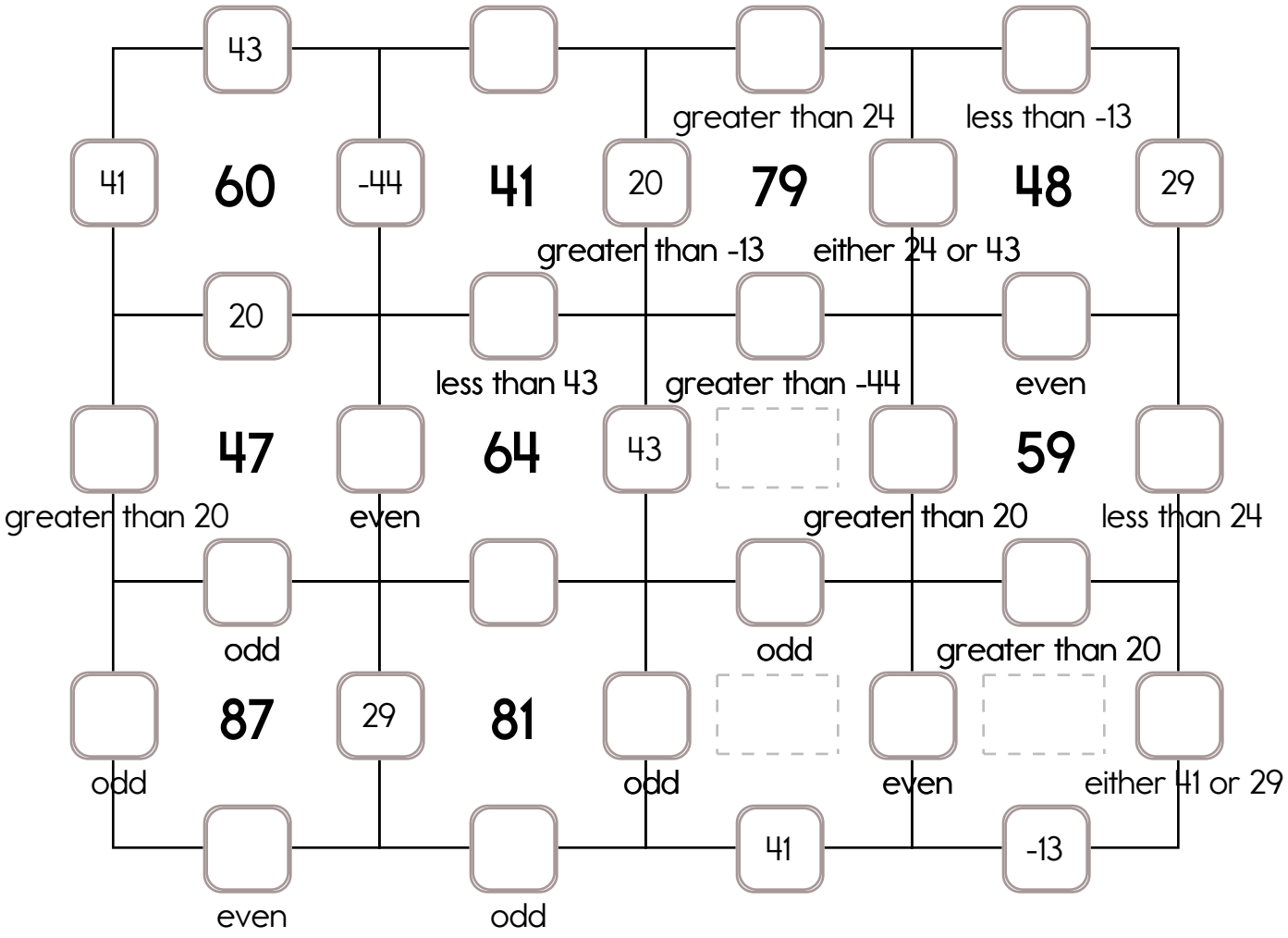
Example:
(-33) + 20 + 43 + 28 = 58

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: -33, -13, or -44. The other three numbers have to all be DIFFERENT and must be from these: 28, 24, 41, 43, 29, or 20.



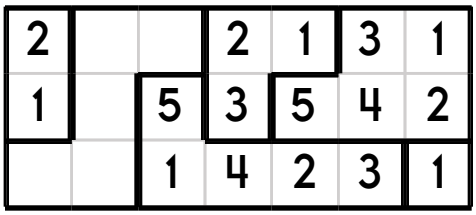
Name: _____

Fill in the missing numbers.

Only rule - The same number CAN NOT be next to each other, in ANY direction.

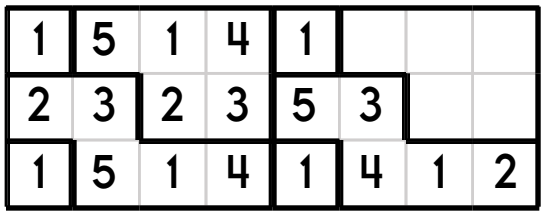
Dark lines surround a block. Numbers to use in a block:

A block with 1 space has to be the number 1.
A block with 2 spaces must have the numbers 1 and 2.
A block with 3 spaces must have the numbers 1, 2, and 3.
A block with 4 spaces must have the numbers 1, 2, 3, and 4.



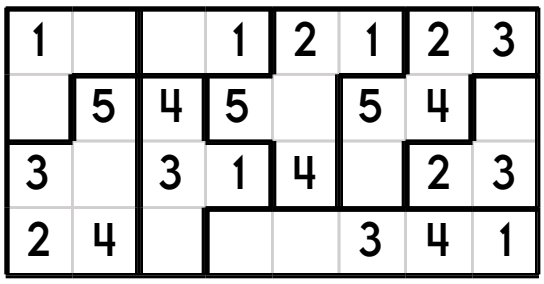
An entire block with 5 spaces is blank. Since the block is 5 spaces it uses the numbers 1-5.

3 2 5 4 1



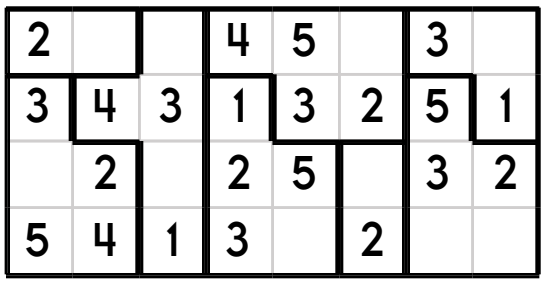
An entire block with 5 spaces is blank. Since the block is 5 spaces it uses the numbers 1-5.

4 2 1 3 5



Hint - These numbers are missing:

2 2 5 2 2 3 1 1 3 1



Hint - These numbers are missing:

2 1 1 5 4 1 1 1 4 2

Name: _____

Sudoku Sums of 12

Each row, column, and box must have the numbers 1 through 9.
Hint: Look for sudoku sums. The sum of the two boxes inside of the dashed lines is 12.

Here is an example of a sudoku sum of 12: 9 | 3

	4							
3	8	6		9				
		7		5			4	
								7
		4			1			
8	6		4		3		9	1
		3					7	
4	9		5				6	3
	7	8		6	9			4

6,886 - 2,351 = _____

9 x 8 = _____

11 x 12 =

$$\begin{array}{r} 832 \\ -\ 558 \\ \hline \end{array}$$

48 ÷ 12 = _____

word root **saur** can mean **lizard** **tyrannosaurus, dinosaur**

Name: _____

FUN BREAK!

Play a game online!

edHelper.com/math-games.htm

I PLAYED ONE GAME

☐ (Check the box after you play.)

MY SCORE

_____

Change $\frac{40}{15}$ to a mixed number.

Find 50% of 124.

Change $\frac{3}{20}$ to a decimal.

$$\begin{array}{r} 57.9 \\ +\ 4.27 \\ \hline \end{array}$$

Change 0.08 to a percent.

Subtract 309 from 391.

Name: _____

258 + 961 + 324 =

$$\begin{array}{r} 908 \\ -\ 780 \\ \hline \end{array}$$

Convert to a fraction or mixed number and simplify.

3.15 =

8.92 =

0.6 =

64.39 =

62.83 =

71.4 =

54 is what percent of 135?

Change $\frac{21}{70}$ to a decimal.

Change $\frac{7}{8}$ to a decimal.

$8 + \frac{2}{3} - \frac{1}{2} =$

Change to percents.

0.66 = _____

0.04 = _____

0.95 = _____

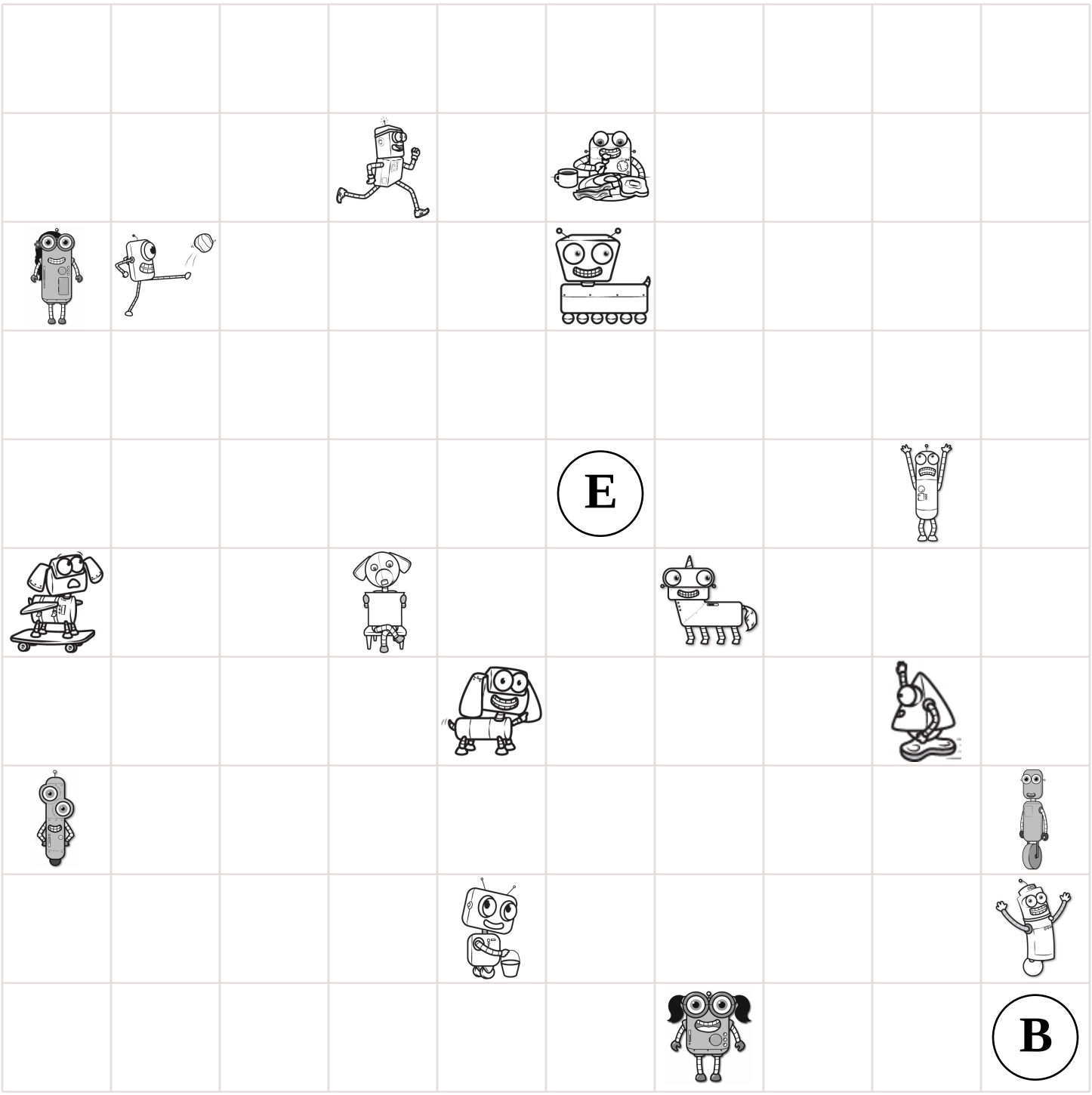
0.72 = _____

0.70 = _____

$$\begin{array}{r} 3\frac{5}{6} \\ -\ 1\frac{4}{5} \\ \hline \end{array}$$

Name: _____

Pick up all of the robots from the game board. Start on the **B** circle. Do not pick up your pencil. Draw a line going left, right, up, or down. **Every line must end on a robot or the E circle. No stopping on an empty box.** Try to collect all the robots and finish your last line on the **E** circle. You can go through a robot more than once.



Didn't get them all? That's ok. This was hard.

I missed _____ circle(s).

Name: _____

Ready to make equations? There is a missing equation in each box.
Circle the numbers once you find it!

A

	14	24	62
-	93	73	29
	46	72	58
	52	67	99

Find a subtraction fact.

B

	27	33	16
-	21	50	92
	70	77	47
	24	69	13

Find a subtraction fact.

C

	65	48	64
-	89	7	78
	28	1	18
	53	39	70

Find a subtraction fact.

Equations:
Write the equation facts you found.

A	72	-	58	=	14
B		-		=	27
C	65	-		=	

Write 2,632 in words.

_____

5,175 + 9,389 = _____

4,379 + 8,668 = _____

13 cm = _____ mm

$$\begin{array}{r} 30 \\ +\ 32 \\ \hline \end{array}$$

$$\begin{array}{r} 76 \\ -\ 61 \\ \hline \end{array}$$

Name: _____

The fifth-grade class had an election. They have a large class of 14 boys and 16 girls. Every kid in the class voted.

The person with the most votes will become the calendar helper. The one with the second to most votes will be the paper collector. The lucky one with the third most votes will become the trash monitor.

Robert got 20% of the vote.

For every 3 voters, Sarah received 1 vote.

For every 6 voters, Jack received 1 vote.

Emily received three-tenths of the vote.

Who has what job?

Please show how you found your answer.

Name: _____

Coach Dave is proud of his hockey team. They had a great season and only lost in the finals to a really good team.
Coach Dave wants to give his best player a trophy. Only 4 players scored during the season.
Jack played 15 games, scored 12 goals, had 6 assists, and spent 22 minutes in the penalty box.
Bob played 13 games, scored 8 goals, had 10 assists, and spent 10 minutes in the penalty box.
Arnold played 16 games, scored 2 goals, had 20 assists, and spent 43 minutes in the penalty box.
Anna played 14 games, scored 3 goals, had 9 assists, and spent 18 minutes in the penalty box.
She was the only girl on the team.
Help Coach Dave decide who most deserves the trophy. What would you say to Coach Dave?

Show your work.

Name: _____

Mrs. Hernandez worked 24.5 hours at the tie factory last week. Alex worked 1.8 times as long as Mrs. Hernandez. How long did Alex work?

On Valentine's Day Adam received 14 valentines. Max received 17 valentines. How many more valentines did Adam receive than Max? (Be very careful with this one!)

At the mud factory, Purple's job is to scoop up mud and make it into kilogram blocks of mud. She loves her job! Today there were 73,196 milligrams of mud trucked in. Each mud block is precisely 1 kilogram, no less, no more. How many mud blocks can she make today?

In each group, circle the number that has the greatest value, and put a square around the number that has the least value.

3^5	3^3	3^1
7^2	7^6	7^1

word root **rupt** can mean **break** **erupt, interrupt**

Name: _____

Draw a line to match each problem with the same answer.

3	●	●	25
42 ÷ 7	●	●	27 ÷ 9
5 x 5	●	●	6
72	●	●	9 x 8

Skill: Whole Numbers, Factors, and Prime Numbers

Emma has $\frac{5}{6}$ gallon of paint. She painted her room and used $\frac{2}{3}$ of it. How much paint did she use?

$\frac{2}{3} \div \frac{5}{6}$

$\frac{2}{3} \times \frac{5}{6}$

Skill: Fractions and Mixed Numbers (multiplication/division)

Compare the numbers. Write >, <, or =.

-6 _____ -9

-8 _____ 0

6 _____ -4

Skill: Positive and Negative Numbers

Fifty people were asked, "Would you rather stay in during a snow day or build a fort?" Ten said they would build a fort. What percent would build a fort?

10% 20%

Skill: Percents

Write the fraction as a decimal.

$\frac{3}{100}$ =

Skill: Fractions and Mixed Numbers (addition/subtraction)

Name: _____

Write each product in the simplest form.

$\frac{1}{6} \times \frac{3}{5}$

$\frac{3}{8} \times \frac{7}{16}$

$\frac{1}{2} \times \frac{3}{4}$

$\frac{9}{13} \times \frac{1}{15}$

$\frac{1}{2} \times \frac{7}{8}$

$\frac{2}{3} \times \frac{6}{7}$

$\frac{5}{11} \times \frac{1}{2}$

$\frac{1}{2} \times \frac{3}{4}$

$\frac{5}{8} \times \frac{7}{9}$

$\frac{2}{3} \times \frac{7}{13}$

$\frac{1}{5} \times \frac{7}{20}$

$\frac{5}{12} \times \frac{1}{3}$

Name: _____

Cross off the number that does NOT belong.

6, 10, 14, 20, 26, 34, 42, 52, 62, 74, 86, 100, 114, 125, 130, 146, 164

Why does _____ not belong in the pattern?

Cross off the number that does NOT belong.

(6,442,450,944), (805,306,368), (100,663,296),

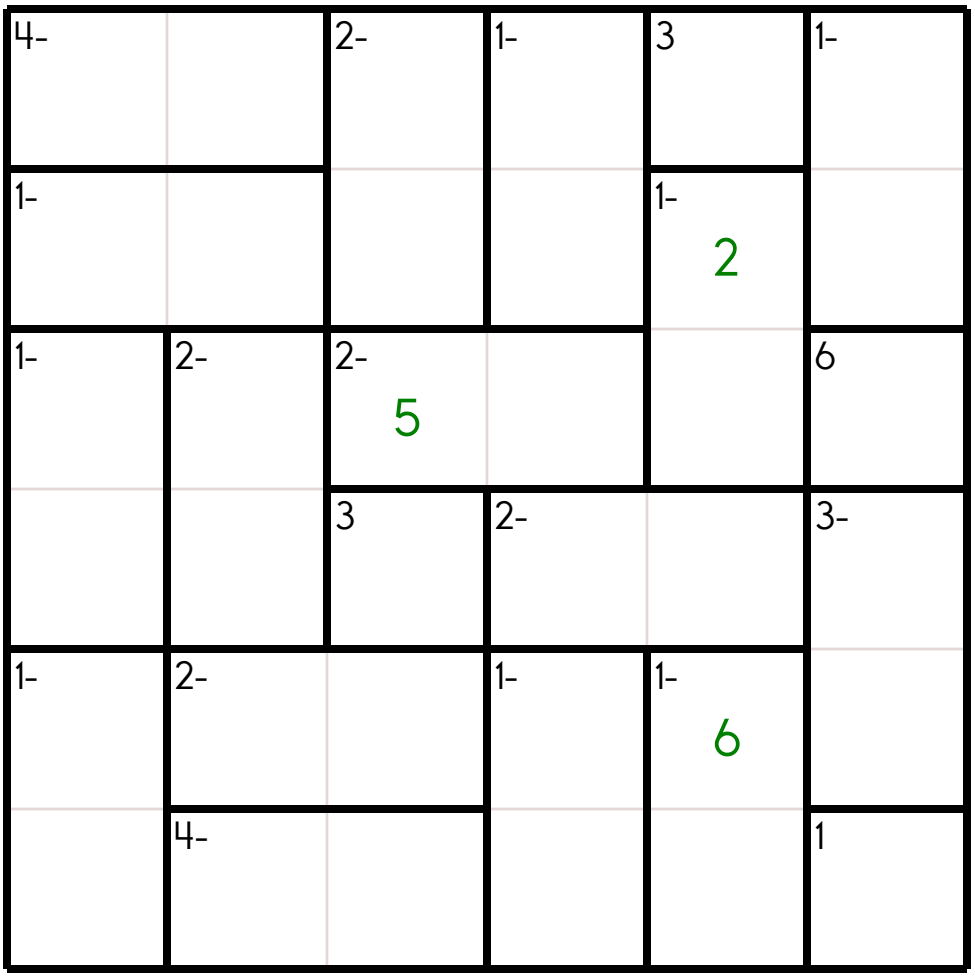
(12,582,912), (1,572,864), (196,608), (24,576),

(12,089), (3,072), (384), (48)

Why does _____ not belong in the pattern?

Name: _____

Fill in each box of the edHelperKu puzzle, using the numbers from 1 to 6.
Every row must contain the numbers 1, 2, 3, 4, 5, and 6.
Every column must contain the numbers 1, 2, 3, 4, 5, and 6.
In a cage with a subtraction sign, the given number will be the difference. The largest number will always be the box with the clue.



Fill in the blanks. These equations are from the puzzle above.

6 - ____ = 1

____ - 1 = 1

4 - ____ = 1

____ - 4 = 2

____ - 1 = 4

____ - 4 = 2

____ - 2 = 3

____ - 2 = 4

Name: _____

Anna likes to make her own board games with special dice. In her latest creation, each die has 7, 8, 9, 10, 11, and 12. If you have to roll two of these dice for each move, what is the most likely outcome for your first move?

Five hundred multiplied by ten raised to what power equals ?

Ava and three of her friends do yard work on the weekends. This weekend, they made $87.17 together. If they want to try to split the money evenly using only dollar bills and quarters, how much will each get? Is there any remainder?

Rose is working on a little tire for a toy car. In fast mode, the tire will rotate 12 times per second. In slow mode, it rotates 6 times per second. Rose put the car on fast mode and let it run for 2.6 minutes. How many times did the little tire rotate during this time?

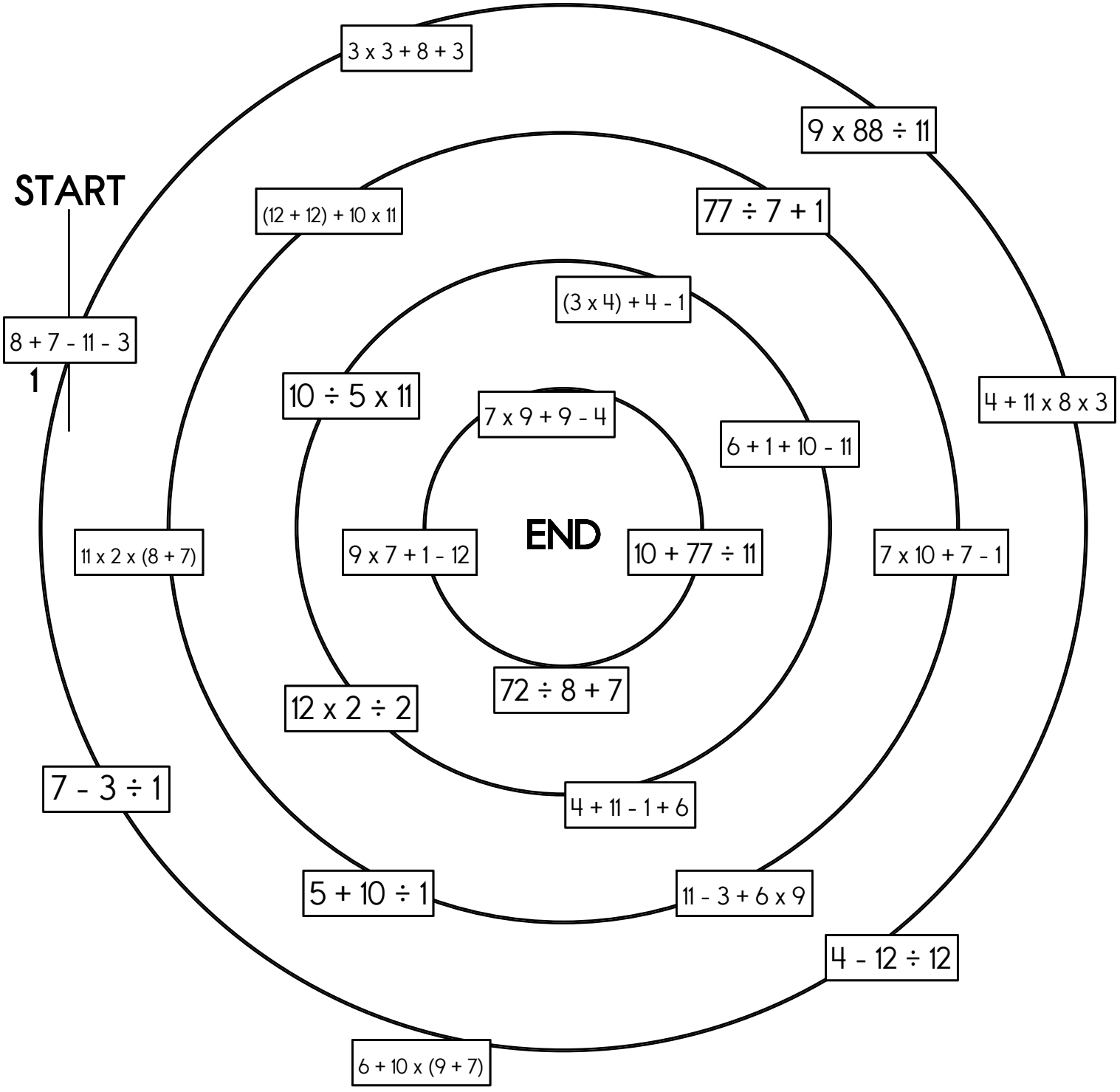
Name: _____

Draw a line from START to END.

17 12 ~~1~~

20

Cross out the number you use above and then write it below.



Name: _____

Rewrite this mixed number as an improper fraction.

$13\frac{7}{10}$

What 3 coins add up to 36 cents?

9 x 10 + (6 x 7)

It was 8 degrees above zero in the morning. By afternoon the temperature rose 26 degrees. How warm was it?

$46\frac{5}{7}$, $44\frac{1}{7}$, $41\frac{4}{7}$, 39, $36\frac{3}{7}$, $33\frac{6}{7}$, $31\frac{2}{7}$, _____, $26\frac{1}{7}$, $23\frac{4}{7}$, 21, $18\frac{3}{7}$

9, 11, _____, 15, 17, 19, 21

$19\frac{1}{4}$, 19, $18\frac{2}{3}$, $18\frac{5}{12}$, $18\frac{1}{12}$, $17\frac{5}{6}$, $17\frac{1}{2}$, $17\frac{1}{4}$, $16\frac{11}{12}$, $16\frac{2}{3}$, _____, $16\frac{1}{12}$, $15\frac{3}{4}$, $15\frac{1}{2}$

Name: _____

Fill in the missing numbers.

16 - (-9) = _____

20 - (_____) = 24

15 + (_____) = 7

-25 - (-3) = _____

_____ - (-6) = -13

-18 + (_____) = -20

Rewrite 7 - 3

Using numbers: -3 and 7

___ + ___ = ___

-5 + 14 = ___

15 - 4 = ___

15 + -4 = ___

$6\frac{2}{9} + 4\frac{3}{9}$

Know how many inches in a foot? Okay, smarty pants, how many inches in 7 feet?

Pick the family fact that is missing.

120 ÷ 15 = 8

8 x 15 = 120

120 ÷ 8 = 15

(3 + 7) + 2 =

55 ÷ 5 =

10 x 12 = _____

Name: _____

Each box needs a number from 1 to 9. You may re-use numbers.

sum of 3 ↓	sum of 7 ↓	sum of 4 →					
		sum of 3 ↓			sum of 2 →		
			sum of 9 →				sum of 5 ↓
sum of 4 →					sum of 7 ↓		2
sum of 9 ↓			sum of 10 ↓	sum of 6 ↓	2		
4		sum of 9 →	3	1			
2	sum of 10 →			5			
				sum of 9 →			

		sum of 8 →				sum of 5 ↓	sum of 4 ↓
sum of 8 →							1
sum of 8 ↓	sum of 9 ↓			sum of 6 ↓	sum of 4 →		3
5			sum of 5 →				
		sum of 5 ↓	sum of 8 ↓		sum of 10 ↓	sum of 7 ↓	sum of 4 ↓
sum of 5 →	1						
				sum of 7 →		2	
	sum of 6 →		4	sum of 8 →			

Can 696 be evenly divided by 5? Circle:
696 is evenly divisible by 5
696 is NOT evenly divisible by 5

Jason has three quarters, two dimes, and one nickel. He also has one other coin that is different from the rest of his coins. How much could he have?

4 x 3 = _____

How many centimeters are in 80 millimeters?

_____ centimeters

$$\begin{array}{r} 471 \\ +\ 247 \\ \hline \end{array}$$

66 ÷ 11 =

1 lb = 16 oz

14 lb = _____ oz

Name: _____

Eric and his family are planning a trip to Ocracoke Island, the home of the famous pirate Blackbeard. They live 346 miles from Ocracoke. If they travel at an average speed of 58 miles per hour, how long will it take them to drive to Ocracoke Island?

It was such pandemonium! There were books stacked everywhere in the new bookstore. Max finally found the book he wanted at the bottom of the stack. He gave the clerk a 20-dollar bill. If the price of the book was $16.42, how much change did he get?

Fred the Fantastic does his magic act on a revolving stage. The stage has a diameter of 12.3 feet. What is the area of the stage? Round your answer to the nearest hundredth.

John Glenn's Mercury capsule missed its ocean target by -40 miles. Scott Carpenter's capsule missed its target by -250 miles. How much farther away was Carpenter's capsule than Glenn's?

Of the 70 students at Donya's Dance Studio, 11 are girls from 6 to 8 years old, and 10 are girls under age 6. What is the ratio of girls under age 9 to the total number of students? Write the ratio as a fraction in lowest terms.

$|-12| + g = 10$

$g =$

$y = x + 18$

$y = 25$

What is the value of x?

What is the remainder of 96 divided by 18?

Name: _____

Holly planted 12 strawberry plants. For four weeks in a row, each plant produced 7 strawberries. Holly shared her strawberries equally among her 7 best friends and herself. How many strawberries did each person get?

Everyone was making a poster about forgiveness for Let It Go Day. Jason wanted his to be a little different. He decided to make it round. If his poster has a radius of five inches, what will the circumference of the circle be?

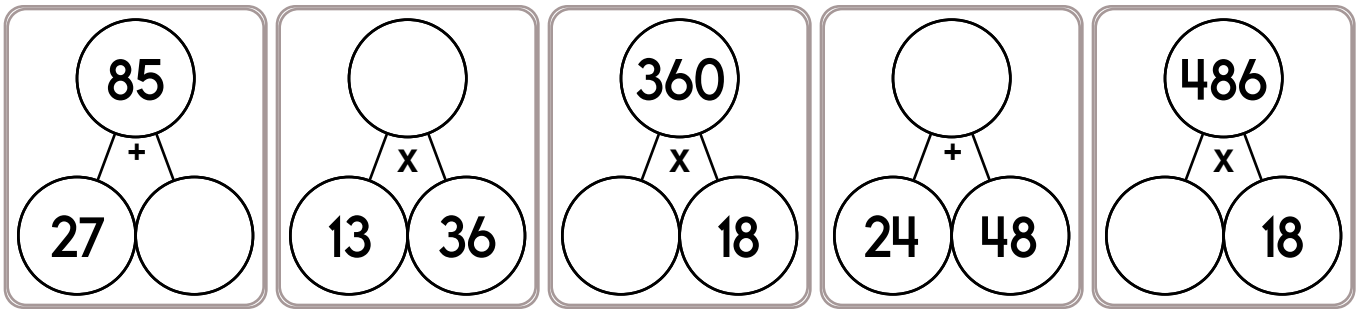
As of 1997, Hoo Sateow of Chang Mai, Thailand, had the world's longest hair. At that time his hair was 203 inches long. Write the length of his hair in feet and inches.

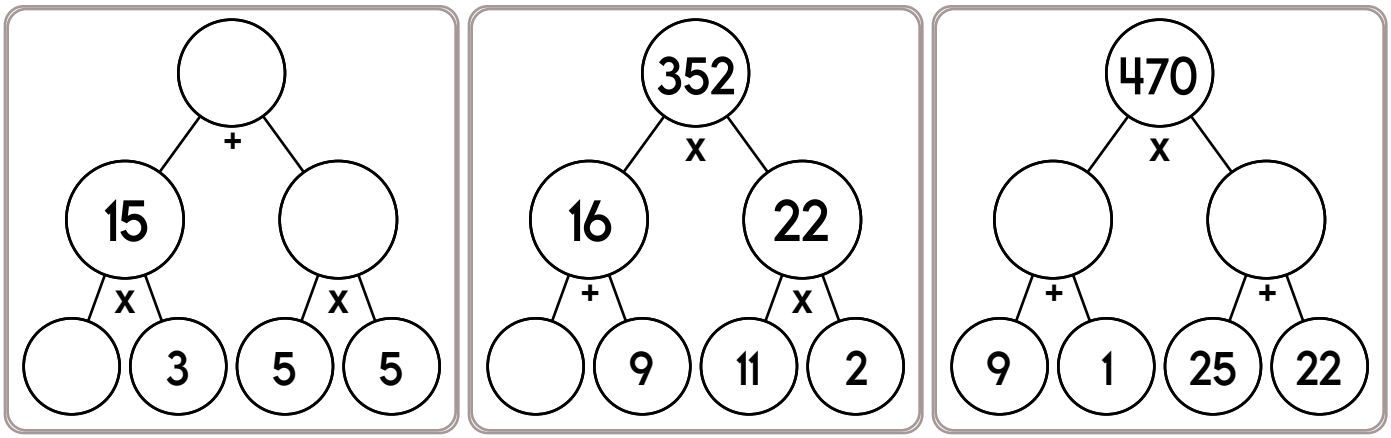
Mr. Walker wrote down his daily black cow root beer float sales for the last week. He had sold 430 floats at $2.20 each. The ingredients for the floats cost $1.07 per float. How much profit did he make last week?

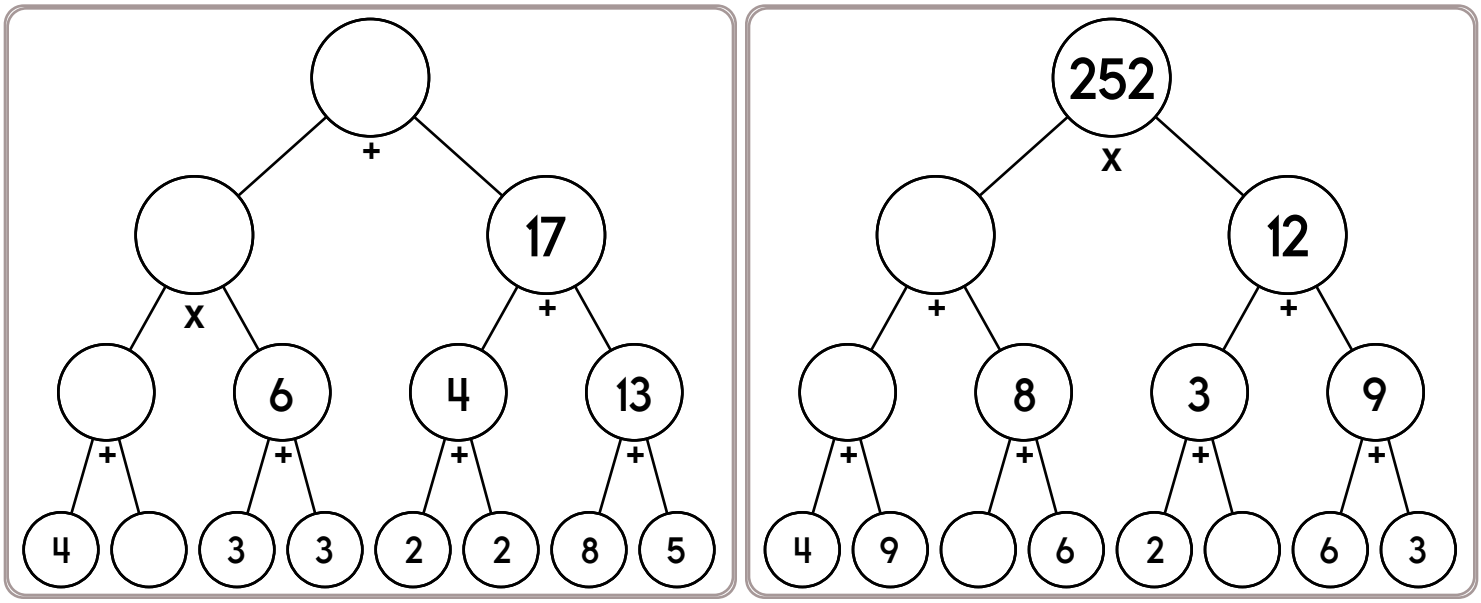
Connor is a volunteer at a kitchen that serves meals to people that need help. He uses $1\frac{1}{4}$ pounds of meat to make enough spaghetti sauce to serve 6 people. How many people could be served if he used 36 pounds of meat?

The tap dance recital will be held at Madison Community Theater on May 24. The auditorium will hold 642 people and 77% of the tickets have been sold. How many more tickets will need to be sold to fill the auditorium?

Name: _____







Change $\frac{196}{105}$ to a mixed number.

221 is what percent of 325?

$$8\frac{3}{12}$$
$$-\ 7\frac{10}{12}$$

Name: _____

FUN BREAK!

Play a game online!

edHelper.com/math-games.htm

I PLAYED ONE GAME

☐ (Check the box after you play.)

MY SCORE

_____

6,169 - 659	9.49 797.36 1.374 + 96.296	247.6 +947.629
3,664,437 - 2,186	Change $\frac{70}{100}$ to a percent.	Write the decimal number for: sixty-nine thousandths

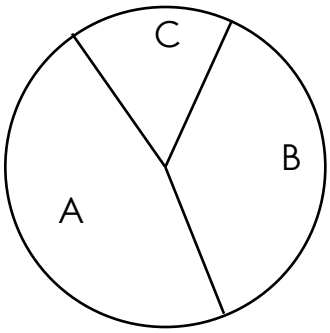
Name: _____

Jenna loves to swim. If she swims for 5 minutes, she can average a lap every 146 seconds. If she swims for 10 minutes, the average speed of each lap is 14 seconds slower than when she swims for 5 minutes.

Today, Jenna is going to swim laps for 10 minutes. How many laps do you think she will be able to complete?

Pam referees soccer games. U12-U14 games are 35-minute halves. U15-16 games are 40-minute halves. U17-19 games are 45-minute halves.

Today she is working a U15 game that starts at 8:00 a.m. If halftime is seven minutes, what would be a reasonable estimate for when the game will end?



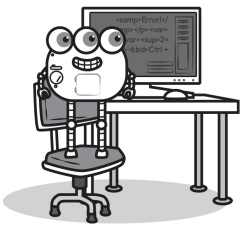
This circle has been split up into three parts. Approximately what percent is each of the letters? You do not need to be exact, but your answers should make sense.

A = _____ % B = _____ % C = _____ %

A + B + C = 100%

A recipe for pound cake calls for 8 eggs and 3 cups of all-purpose flour. Jack only has 6 eggs. How many cups of all-purpose flour should he use?

Name: _____



Robot was given a math problem to solve.

The Ames Nursery sold 553 houseplants in March, 752 in May, and 1956 in June. How many houseplants were sold in all?

Robot wrote this program in Python to solve it.

```
# Assigning values to variables
March_sales = 553
May_sales = 752
June_sales = 1956

# Summing up the values
total_sales = March_sales + May_sales + June_sales

print(total_sales)
```

Robot's program will print the answer to the math problem.
What will the program print out? Fill in the blanks.

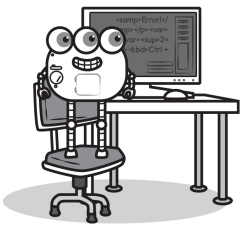
___ ___ ___ ___

Hints and Questions

When Robot wants to help explain something in the program, Robot starts a line with # and a space. This is called a comment. How many comments are in Robot's program?

After Robot's program is done, the variable March_sales will have a value in it. What value does it have?

Name: _____



Robot wrote this program to solve a math problem.

```
# assign the number of each candy to variables
lemon_drops = 6
lollipops = 20
peppermints = 24

# calculate the total number of candies by adding each candy's count
total_candies = lemon_drops + lollipops + peppermints

print("Freddy Frog won a total of", total_candies, "candies.")
```

What will the program print out? Fill in the blanks.

Freddy Frog won a total of ____ ____ candies.

Wait! Robot forgot to write down the math problem.
Can you write your own word problem to explain Robot's computer code?

Name: _____

Justin decided to repaint his bedroom during Jump Out of Bed Month. It took three quarts of paint to paint $\frac{1}{4}$ of his room. At a cost of $25.19 per gallon, how much will the paint cost for his whole room?

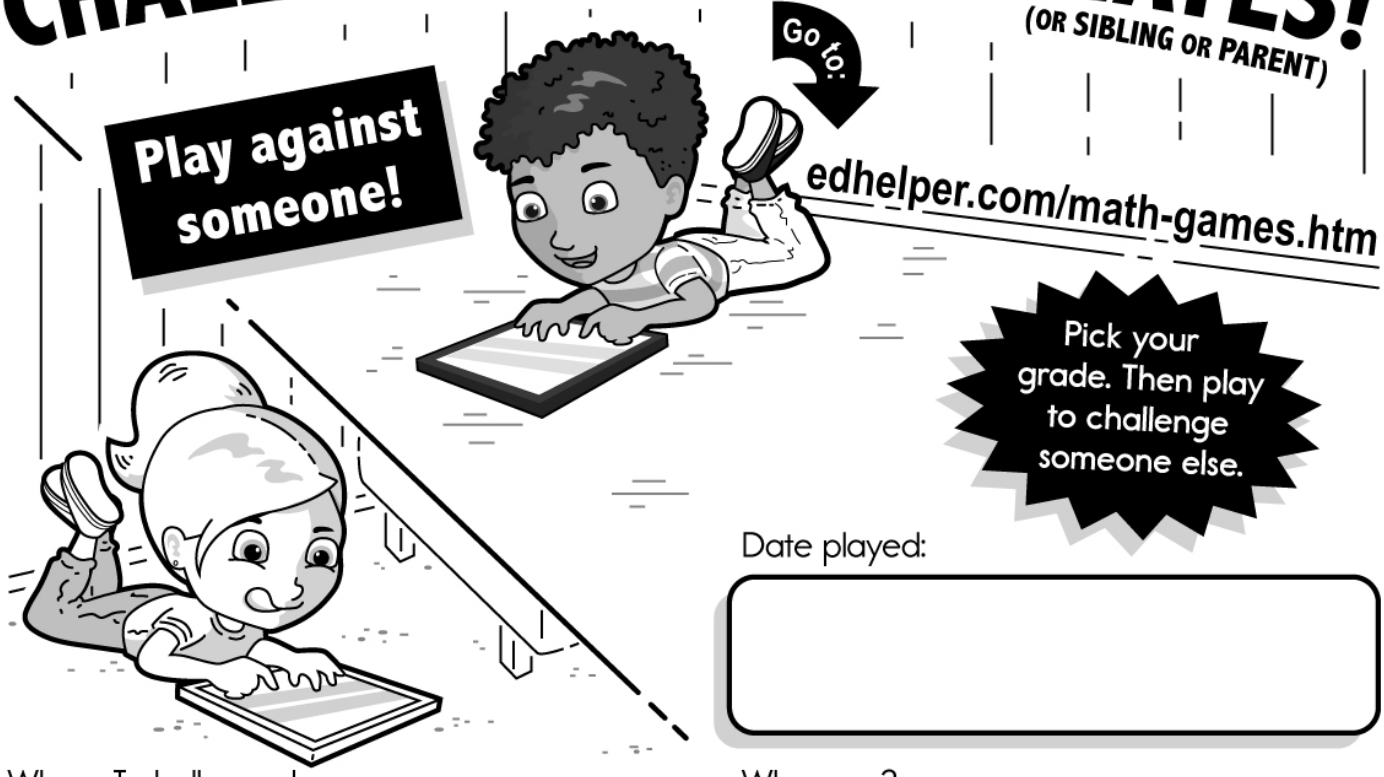
The fish in tank 1 are fed every 12 hours. The fish in tank 2 are fed every 6 hours. Assuming they are both fed at the same time on one day, how many hours will it be before they are again both fed at the same time?

In the fourth grade, each student read one poem. Of the students, $\frac{1}{5}$ read "The River," $\frac{1}{5}$ read "Storm Clouds," and $\frac{3}{5}$ read "First Spring." Which poem was read by the most students?

Name: _____

CHALLENGE YOUR CLASSMATES!

(OR SIBLING OR PARENT)



Date played:

Whom I challenged:

Who won?

Explain what you learned from one math problem you got wrong.

Reduce $\frac{2}{40}$ to its lowest terms.

$$\begin{array}{r} 729 \\ +\ 72 \\ \hline \end{array}$$

$$\begin{array}{r} 863 \\ -\ 49 \\ \hline \end{array}$$

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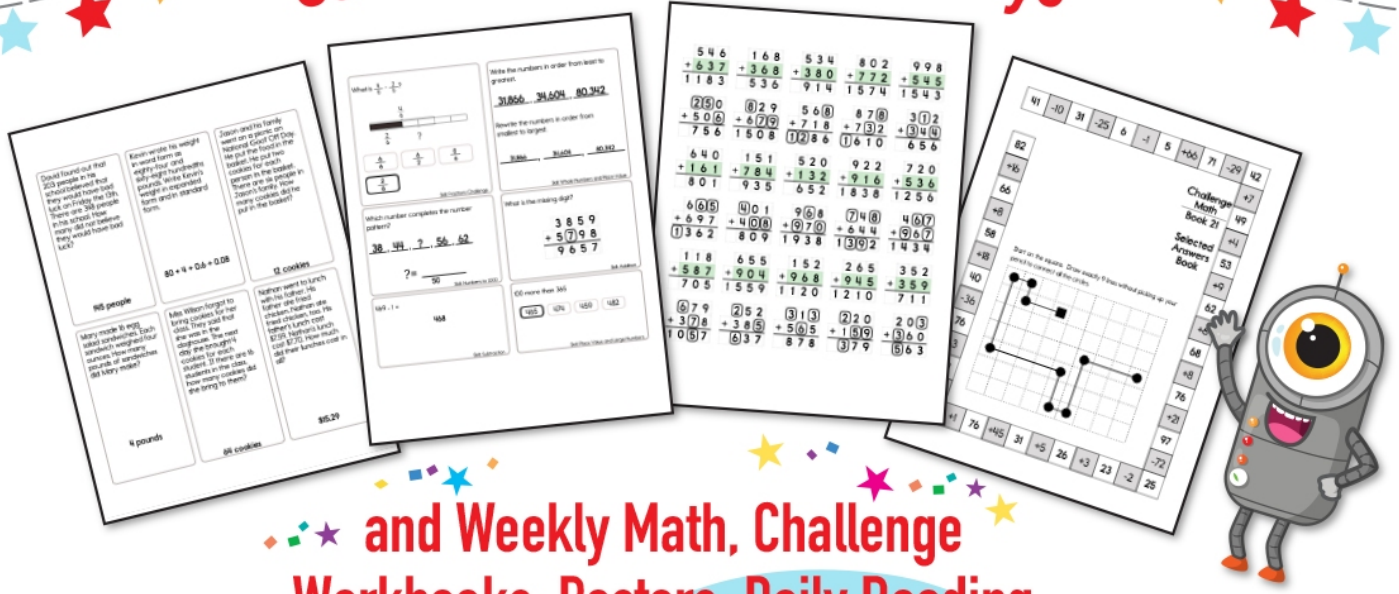

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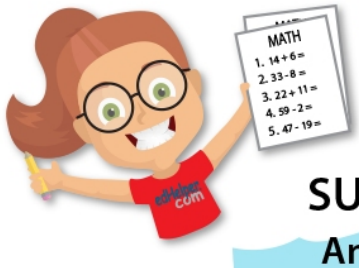

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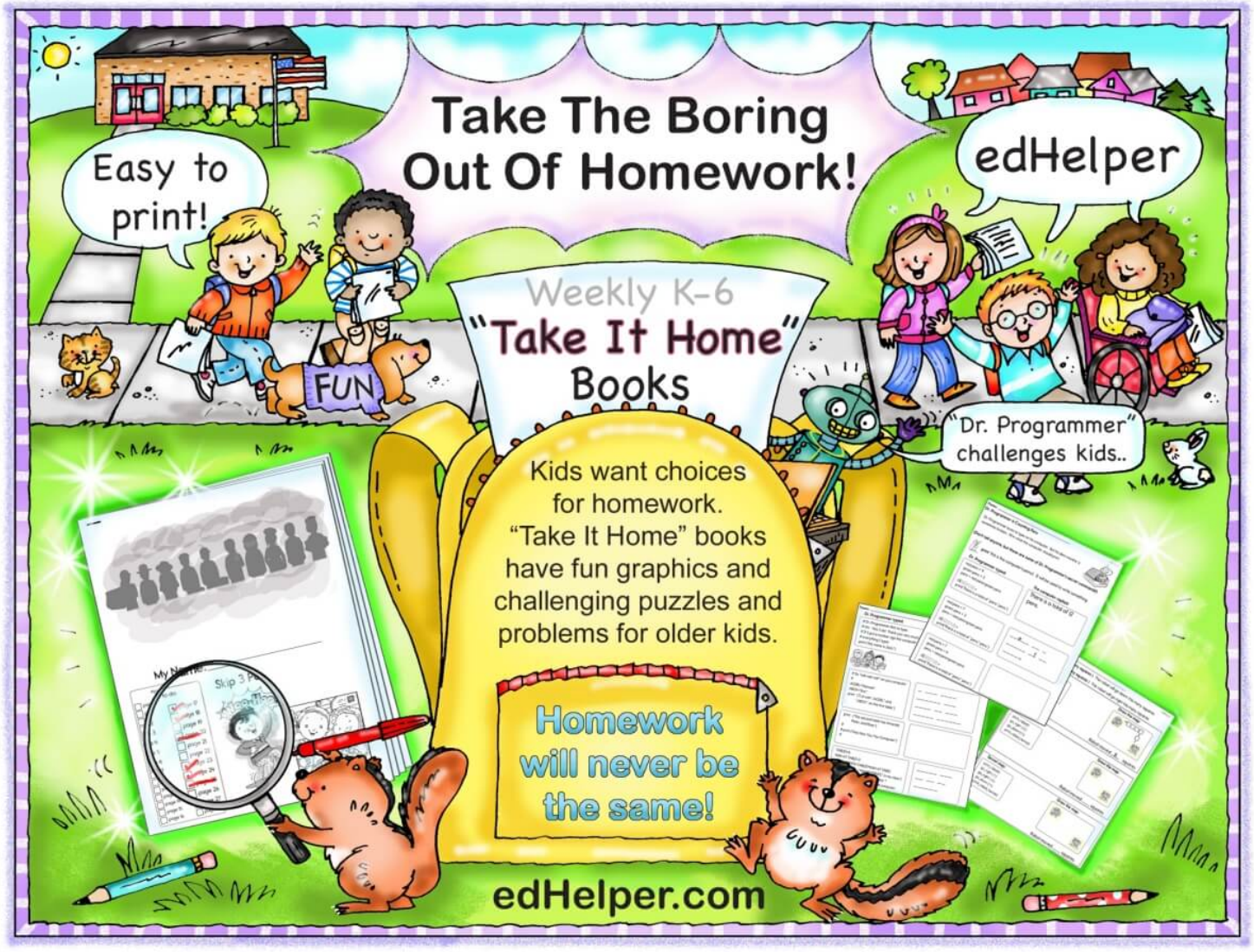
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