

Math Challenge

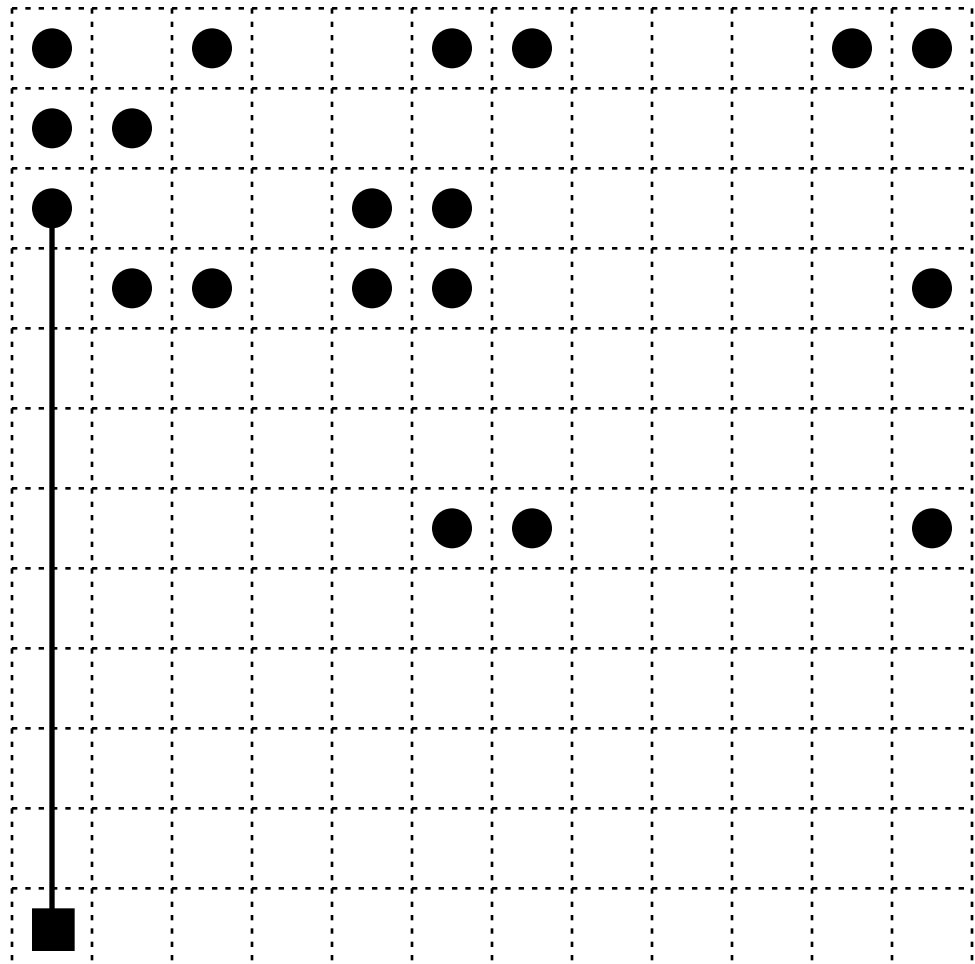


My Name: _____

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Start on the square. Draw exactly 12 lines without picking up your pencil to connect all the circles.



Name: _____

Two jets leave an airport at the same time in opposite directions. The first jet is traveling at three hundred forty-eight mph and the other at two hundred ninety-four mph. How long will it take for the jets to be 3,029 miles apart?

Courtney left Seattle at 1:45. Courtney drove her car at thirty-four mph. William wanted to catch up with Courtney and left from where Courtney started at 2:57. William traveled at a speed that was eighteen mph more than Courtney did. At what time will William catch up with Courtney?

Kyle lives thirty-one miles from work. This morning, he left for work at 7:37 a.m. There was construction for the first twenty miles, so Kyle only drove at an average speed of twenty mph around the construction area. If Kyle needs to be at work by 8:52 a.m., what should be his average speed for the rest of the way to work?

Samuel left Miami and drove at a speed of 45 kph. Ethan left 3 hours later and drove at a speed of 60 kph. How long will it take Ethan to catch up with Samuel?

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Name: _____

Get a fidget spinner! Spin it.

I needed to spin _____ time(s) to finish.

Estimate quickly the difference.
 $5,460 - 2,140$

$$29 + n = 48$$

What is the value of n ?

It was 3 degrees below zero in the morning. By afternoon the temperature rose 27 degrees. How warm was it?

It was 75 degrees outside. What would the temperature be if it got 13 degrees colder?

How much money is 1 quarter, 3 dimes, 1 nickel, and 1 penny?

$$9 \div 9 \times 11$$

$$5.4505 \times 10^2 =$$

If $v = 6$ and $x = -31$ then what is the value of w ?
 $7v + 13x - 2x = w$

$$0.002 \times 0.4$$

A circle graph has five sections. Only four sections are labeled. The labels are 14%, 19%, 3%, and 9%. What should the missing section be?

The angles in a quadrilateral measure 117° , 111° , 81° , and f° . What is the value of f ?

$y = x + 15$
 $y = 24$
What is the value of x ?

Name: _____

The tens digit of a two-digit number is seven more than two times the ones digit. The sum of the digits is 10. What is the number?

The tens digit of a two-digit number is three more than twice the ones digit. The number is fifty-seven more than three times the sum of the digits of the number. What is the number?

EdHelper Airlines flight D4892 from Boston to Kansas City averaged a speed of 90 mph more than the return trip back to Boston. The return trip took $1\frac{97}{300}$ times longer than the trip going to Kansas City. The distance between Boston and Kansas City is one thousand, eight hundred fifty miles. What was the average speed from Kansas City to Boston?

The ratio of the ones digit of a two-digit number to the tens digit is one-third. The ones digit is two less than the tens digit. What is the number?

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: $7\frac{1}{2}$, $5\frac{2}{3}$, or $6\frac{1}{8}$.

The other three numbers have to all be DIFFERENT and must be from these: $3\frac{1}{2}$, $4\frac{1}{2}$, $1\frac{1}{2}$,

or $2\frac{1}{2}$.

	$7\frac{1}{2}$		$5\frac{2}{3}$		$5\frac{2}{3}$		$3\frac{1}{2}$	
$1\frac{1}{2}$	16	$2\frac{1}{2}$		$1\frac{1}{2}$	$15\frac{1}{6}$	$4\frac{1}{2}$	$16\frac{5}{8}$	$2\frac{1}{2}$
	$4\frac{1}{2}$		$3\frac{1}{2}$		$3\frac{1}{2}$		$6\frac{1}{8}$	
$2\frac{1}{2}$	$14\frac{5}{8}$	$6\frac{1}{8}$	$16\frac{5}{8}$	$4\frac{1}{2}$	$15\frac{1}{6}$	$1\frac{1}{2}$	$14\frac{5}{8}$	$2\frac{1}{2}$
	$1\frac{1}{2}$		$2\frac{1}{2}$		$5\frac{2}{3}$		$4\frac{1}{2}$	
$3\frac{1}{2}$	$15\frac{5}{8}$	$6\frac{1}{8}$	$14\frac{5}{8}$	$4\frac{1}{2}$	$15\frac{1}{6}$	$3\frac{1}{2}$	$16\frac{5}{8}$	$2\frac{1}{2}$
	$4\frac{1}{2}$		$1\frac{1}{2}$		$1\frac{1}{2}$		$6\frac{1}{8}$	
$5\frac{2}{3}$	$16\frac{1}{6}$	$3\frac{1}{2}$	17	$4\frac{1}{2}$	$15\frac{1}{6}$	$3\frac{1}{2}$	$16\frac{5}{8}$	$2\frac{1}{2}$
	$2\frac{1}{2}$		$7\frac{1}{2}$		$5\frac{2}{3}$		$4\frac{1}{2}$	
$5\frac{2}{3}$	$13\frac{1}{6}$	$3\frac{1}{2}$	18	$4\frac{1}{2}$		$1\frac{1}{2}$		$3\frac{1}{2}$
	$1\frac{1}{2}$		$2\frac{1}{2}$		$3\frac{1}{2}$		$5\frac{2}{3}$	

Name: _____

The sum of three consecutive integers is 111.
What is the second number?

The sum of five consecutive integers is
41,330,580. What is the first number?

There are three consecutive multiples of
fourteen. The second number is five
hundred eighteen less than three times the
first number. The third number is seven
hundred seventy less than four times the
first number. What are the integers?

There are four consecutive even integers.
The sum of the first and third numbers is 48.
What are the integers?

Name: _____

Dylan can pick all the apples on a farm in 8 days. Elizabeth can do it in 14 days and Tyler can do it in 11 days. If they all worked together, how many days would it take to pick the apples on the farm?

Hunter's copy store received an order for 20,160 copies. The store has 3 printers. The first printer can print fourteen pages per minute, the second twelve pages per minute, and the third ten pages per minute. How long would it take to process the order if all three printers were used at the same time?

It takes Amber and Steven $1\frac{3}{5}$ days to complete a project. Steven works one-fourths as fast as Amber. If Amber wants to do the project alone, how long would it take Amber?

Destiny's copy store received an order for 5,390 copies. The store has 3 printers. If Destiny only uses one printer at a time, the first printer would complete the job in 8 hours and 59 minutes, the second in 8 hours and 10 minutes, and the third in 12 hours and 50 minutes. How long would it take to process the order if all three printers were used at the same time?

Name: _____

Jenna likes to code. She is coding a program that will make HTML pages for her photos. She has 424 photos, and each HTML page will show 15 photos. If someone wants to see more, they will have to click the next link. The title of the first page says:

Jenna's Photos - Page 1

What will be the title for the last page?

Ava likes playing this new game on her phone. It gives you clues, and you need to guess the number. Sometimes she watches an ad to get a hint, but today she wants to answer this with no hints. Here are the clues:

If you triple the secret number and then subtract 27, the answer would be the same result as if you started with the secret number and added 29. What is the secret number?

Sometimes stores will give you a better deal if you spend more, but the store in this game Mary is playing has some stores that try to trick you. She stopped by one store in the game for some extra lives. She currently has 18,084 points to spend. This is the store's menu:

749 points for 8 lives
1,741 points for 34 lives
3,045 points for 85 lives
4,003 points for 149 lives

If Mary wants to buy the most lives, what should she buy and in what quantity?

Batting average = hits \div at-bats

Batting average is then rounded to the nearest thousandth.

Anna has 15 at-bats. She has a batting average of 0.667. How many hits does she have?

Name: _____

Fill in the blanks with $>$, $=$, or the $<$ sign.

$$12 - (-35) \text{ ______ } 37 + (-17)$$

$$9 - (-9) \text{ ______ } -36 - 15$$

$$20 + 10 \text{ ______ } -15 + (-29)$$

$$-39 + (-32) \text{ ______ } -24 - 19$$

$$28 - 13 \text{ ______ } -22 + 16$$

Pick the correct answer using brain power. No writing.

$$0.2 \times 0.3 \text{ is what? } 0.00006 \text{ or } 0.06 \text{ or } 6$$

$$0.11 \times 0.7 \text{ is what? } 0.77 \text{ or } 0.077 \text{ or } 7.7$$

$$0.07 \times 0.7 \text{ is what? } 0.0049 \text{ or } 0.049 \text{ or } 0.00049$$

$$9.4 \times 0.4 \text{ is what? } 0.0376 \text{ or } 3.76 \text{ or } 0.376$$

Name: _____

		+		+		=	
	B		B		?		3
+							
	B		B		A		8
x							
	B		A		C		19
=							
	2		7		73		

Equations and Hints:

Each letter is a whole number.

Fill in the equations using the chart:

$$B + B \times B = 2 \quad \underline{\quad} + B \times A = 7 \quad \underline{\quad} + \underline{\quad} + \underline{\quad} = 8$$

$$\underline{\quad} + \underline{\quad} + \underline{\quad} = 19$$

Additional hints:

$$C < 14 \quad C = B + 11$$

Show Work:

Solve:

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

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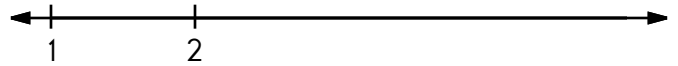
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Show how you would use pennies, nickels, dimes, or quarters to make the amount shown. Try to use the fewest number of coins.

a. \$0.22

b. \$0.34

c. \$1.65



a. Show where 5 should go.

b. Show where $3\frac{1}{2}$ should go.c. Show where $2\frac{2}{3}$ should go.

Sara is flying a jet around Play World in a game she is playing. At the top of the screen, it says her jet is moving at a speed of 1,087 mph. The distance to her target is 615 miles. If her ship continues at this speed, how long until she reaches the target?

a. What is the square root of 43 to the nearest tenth?

b. Holly needs to add the square root of two by the square root of six. She thinks the sum is equal to the square root of eight. Is she correct?

c. What is the square root of 18 to the nearest tenth?

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Name: _____

A box full of geodes was put up for sale at an auction. A geode is a spherical rock that contains crystals. They look really cool when broken open. However you never know what you are going to find when you break one open. Justin decided to bid on them. He checked them out beforehand and counted twenty-six geodes in the box. He decided he was willing to pay up to \$2.93 a piece for them. What should his maximum bid be?

Jason bought a very large star map for his bedroom wall. The map is round. Its radius is three feet. What is the circumference and area of the wall map?

Suppose your grade for the chemistry unit is based upon two tests (each worth 30% of your total grade), three homework assignments (each worth 10% of your total grade), and one lab report (worth 10% of your total grade). If your test scores were 77 and 82, and the homework scores were 91, 90, and 85, what score must you receive on your lab report to ensure a final chemistry unit grade of at least 85?

Amanda measured the pH in a flask of acidic solution several times. She was slowly adding more acid, trying to reach a stable pH of 5.5. Every time she would add a few drops of acid, the pH would drop. A few minutes after she added drops of acid, the pH would start to rise. So she kept this up and finally read the pH five times over a period of five minutes without adding more acid. The five pH measurements were 5.5, 5.37, 5.46, 5.4, and 5.38. What is the range of her measurements?

What is the probability, that on two consecutive rolls of a die, first an odd number, then an even number will come up?

$\frac{13}{18}$ is exactly eleven less than what real number written as an improper fraction?

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Name: _____

Near the end of the Ordovician period (about 430 million years ago), the Earth's sea level is thought to have been about 400 feet above the current sea level. If the Earth's current sea level rose by 19 feet, what would the difference in sea level be, compared to the sea level near the end of the Ordovician period?

Jacob is playing with a standard die. On his last roll he got a six. What is the probability he will get a six the next roll?

If two out of every seven individuals in a population of armadillos carry a gene for a defective enzyme, how many individuals carry the normal gene in a population of 797 armadillos?

At the beginning of a distillation experiment there were 306 ml of methanol in a boiling flask. At the end of the experiment, there were 72 ml. How many milliliters of methanol were removed from the flask?

Eric performed a reaction that resulted in the precipitation of 5.1 g of silver chloride in a beaker. Amanda and Holly performed the same reaction and got 5.6 g and 5.3 g, respectively. The instructor told them that the most silver chloride he had seen produced in the reaction was 6.7 g. Find the average of the three students' results and compare it (as a percent) to the maximum amount seen by the teacher.

Hunter made a basket of fire starters for his father. He made them by dipping pinecones in wax. The wax was different colors. When he finished, he put them in a pretty basket with a big red bow on it. He made twenty-four fire starters. One-fourth of them were red and the rest of them were green. How many were green?

Page 1 Answers

- 1 283 minutes (4 hours and 43 minutes)
- 2 2:58
- 3 44 mph
- 4 $\frac{1}{0}$ hours, or approximately 1 minute

Page 2 Answers

Page 3 Answers

- 1 91
- 2 93
- 3 280 mph (It was 370 mph for the trip going to Kansas City)
- 4 31

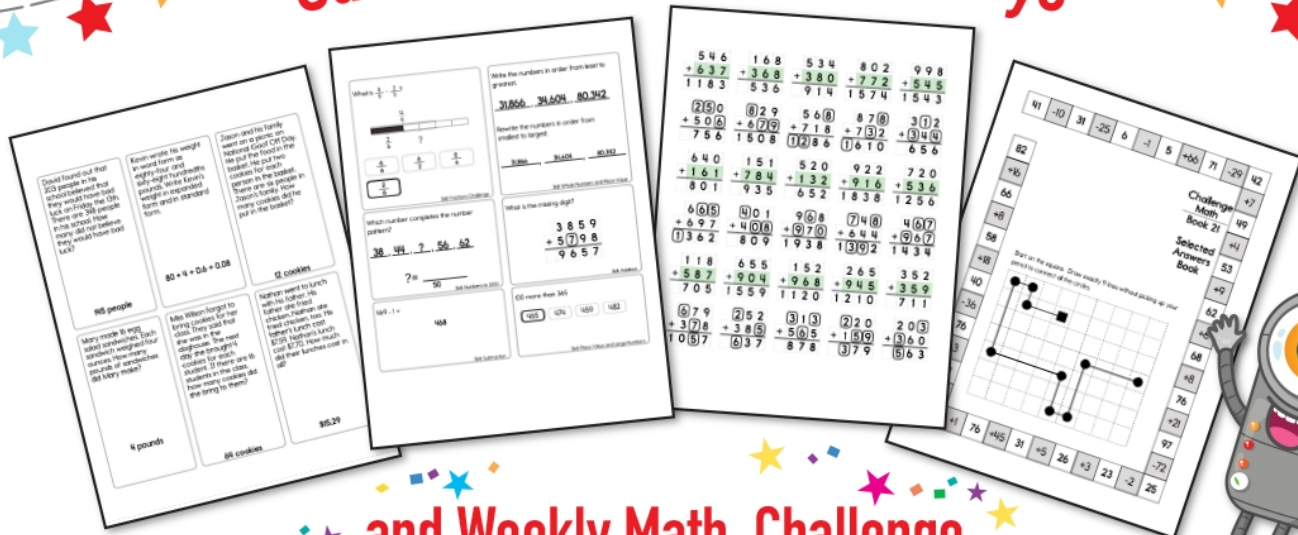
Page 5 Answers

- 1 37 (numbers are 36, 37, and 38)
- 2 8266114 (numbers are 8266114, 8266115, 8266116, 8266117, and 8266118)
- 3 266, 280, and 294
- 4 22, 24, 26, and 28

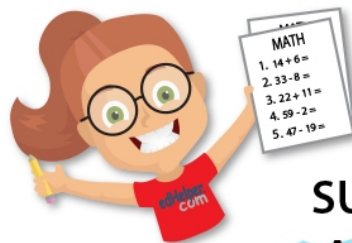
Page 6 Answers

- 1 $3\frac{85}{177}$ days
- 2 9 hours and 20 minutes
- 3 8 days (Steven would take 2 days)
- 4 3 hours and 13 minutes

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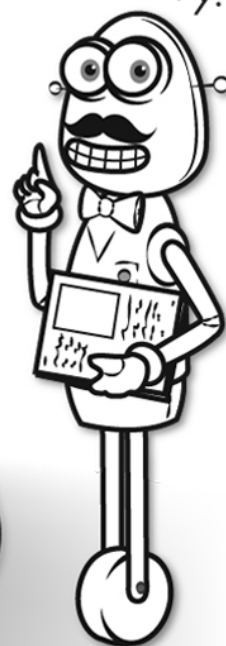


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