

Math Challenge

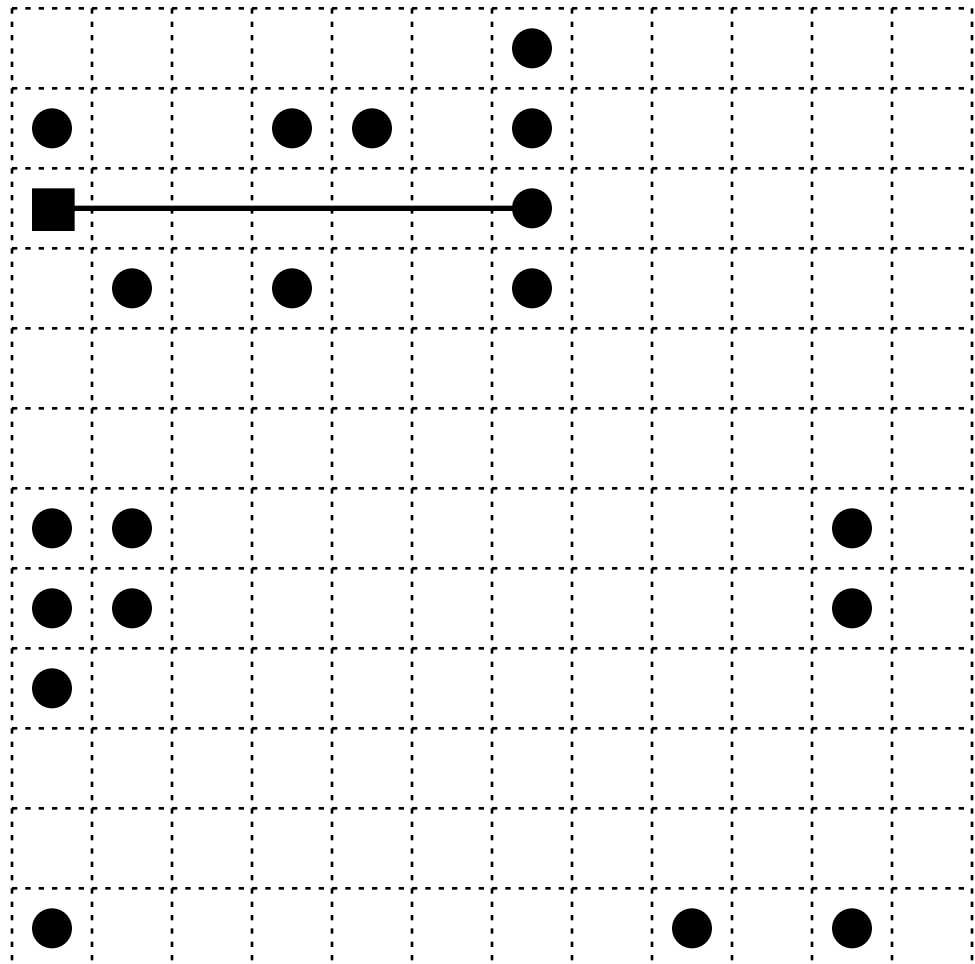


My Name: _____

Skip 1 page.

- ☐ page 1
- ☐ page 2
- ☐ page 3
- ☐ page 4
- ☐ page 5
- ☐ page 6
- ☐ page 7
- ☐ page 8
- ☐ page 9
- ☐ page 10
- ☐ page 11

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



Name: _____

The perimeter of a rectangle is 48 feet and its area is 140 square feet. What are the dimensions of the rectangle?

Andrew drew a rectangle which is 192 square mm. Nathan drew a rectangle inside of Andrew's which is 60 square mm. Nathan's rectangle has a three mm border between his and Andrew's rectangle. What is the area and perimeter of Andrew's rectangle?

The product of two consecutive integers is three hundred four more than four times the smaller one. What are the two integers?

The length of a rectangle is nine times its width. The area of the rectangle is sixteen thousand, six hundred forty-one square feet. What is the perimeter of the rectangle?

Name: _____

Max and Emily are a team. Max makes robots, and Emily fits them for fancy robot clothes. They have two models. Model One is very small at only 6.5 inches. The other is bigger, but Max only gave Emily a calculation as the robot is still in production. Max wanted it to be 2 times the size of Model One, but it turns out the prototype is 3.5 inches shorter than that. How big is the prototype?

Jen is really into science. She invented a robotic bug that burps. Her brother loved it, so she wanted to send the robot to her brother. She checked her phone, and her brother is currently 3.6 miles away. After she set the coordinates on the phone, the robotic bug left. She got a burp confirmation 295.2 seconds later when it reached her brother. How fast did this robotic bug travel in miles per hour? Round your answer to the nearest mile. Hint: Convert time to hours. Then divide the miles by the time in hours.

Name: _____

Jordan and Alexander can finish a job in 6 days. Jordan can do the job herself in eight days. If Alexander wanted to do the job alone, how long would it take him?

Elizabeth can pick all the apples on a farm in 11 days. Timothy can do it in 7 days and Kaylee can do it in 13 days. If they all worked together, how many days would it take to pick the apples on the farm?

Brandon and Jasmine are thinking about working together on a project. The project should start at 2:38 p.m. If Brandon did it by himself, he would finish it by 4:23 p.m. If Jasmine did the project by herself, she would not finish it until 4:57 p.m. If they decided to work together, approximately what time would they finish?

Mackenzie works two times as fast as Brandon. Mackenzie can finish a job in 6 hours. If Mackenzie and Brandon are working together, how long will it take them to finish the job?

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: $9\frac{5}{6}$, $\frac{1}{3}$, or $4\frac{2}{7}$.

The other three numbers have to all be DIFFERENT and must be from these: $7\frac{1}{2}$, $5\frac{2}{3}$, $3\frac{1}{3}$, or $1\frac{1}{6}$.

	$1\frac{1}{6}$		$9\frac{5}{6}$		$9\frac{5}{6}$		$1\frac{1}{6}$	
$5\frac{2}{3}$	$10\frac{1}{2}$	$3\frac{1}{3}$	$26\frac{1}{3}$	$5\frac{2}{3}$	$26\frac{1}{3}$	$7\frac{1}{2}$	$14\frac{2}{3}$	$\frac{1}{3}$
	$\frac{1}{3}$		$7\frac{1}{2}$		$3\frac{1}{3}$		$5\frac{2}{3}$	
$1\frac{1}{6}$	$10\frac{1}{2}$	$3\frac{1}{3}$	$21\frac{5}{6}$	$1\frac{1}{6}$	$12\frac{1}{3}$	$\frac{1}{3}$	$10\frac{1}{2}$	$3\frac{1}{3}$
	$5\frac{2}{3}$		$9\frac{5}{6}$		$7\frac{1}{2}$		$1\frac{1}{6}$	
$3\frac{1}{3}$	$10\frac{1}{2}$	$1\frac{1}{6}$	20	$5\frac{2}{3}$	$26\frac{1}{3}$	$3\frac{1}{3}$		$7\frac{1}{2}$
	$\frac{1}{3}$		$3\frac{1}{3}$		$9\frac{5}{6}$		$9\frac{5}{6}$	
$5\frac{2}{3}$	$14\frac{2}{3}$	$7\frac{1}{2}$	$16\frac{5}{6}$	$5\frac{2}{3}$	$24\frac{1}{6}$	$1\frac{1}{6}$	$21\frac{5}{6}$	$7\frac{1}{2}$
	$1\frac{1}{6}$		$\frac{1}{3}$		$7\frac{1}{2}$		$3\frac{1}{3}$	
$4\frac{2}{7}$	$16\frac{2}{7}$	$7\frac{1}{2}$	$14\frac{2}{3}$	$1\frac{1}{6}$		$\frac{1}{3}$		$5\frac{2}{3}$
	$3\frac{1}{3}$		$5\frac{2}{3}$		$5\frac{2}{3}$		$1\frac{1}{6}$	

Name: _____

Cameron is sixty-four less than three times the age of Devin. Amber is twenty less than two times the age of Devin. The sum of their ages is sixty-six. How old is Amber?

Jessica is ten years older than Emily. Jessica is three years older than Jason. Jason is seven years older than Emily. The sum of all three ages is thirteen less than three times the age of Jessica. How old is Emily?

Rachel is four years older than Natalie. Rachel is five years younger than Alyssa. Timothy is four years younger than Alyssa. Timothy is five years older than Natalie. The sum of their ages is ninety. How old is Rachel?

Justin is three times as old as Jonathan. Tyler is four times as old as Jonathan. Tyler is forty-five years older than Jonathan. How old is Jonathan?

☐

I did page 6

☐I decided to skip this page
edHelper**Name:** _____

The EdHelper football team played a game against the Math Wizards. They played two halves, each of which lasted twenty-two minutes. The EdHelper team's time of possession was two minutes more than the Math Wizard's. How long was the Math Wizard's time of possession?

A baseball team won four more than three times the number of games lost. If the team played forty games, how many games did the team lose?

On Monday, Megan played six games of bowling and averaged a score of 130. She played four more games on Wednesday to bring her average over all the games played on Monday and Wednesday to 154. What was her average score on Wednesday?

Batting average is the number of hits divided by the number of at bats. Katherine has a 0.253 batting average after one hundred fifty at bats. How many hits will Katherine need in her next one hundred at bats to raise her batting average to 0.304?

☐

I did page 7

☐I decided to skip this page
edHelper**Name:** _____

Four girls ran a mile. The winner finished in eight minutes and ten seconds. Mary did not win, but she finished 14 seconds before April and 21 seconds before Anna. If Anna had been 45 seconds faster, she would have won the race by 1 second. List each of the racers and their times to run the mile.

Alex calculated that $20 \times 10 = 200$.

Show how you could use that information to figure out what 2.0×11 is without using the usual multiplication method.

a. Draw a big N. Next to it draw N again but rotated ninety degrees clockwise.

b. Draw a big T. Next to it, draw T again but rotated forty-five degrees counterclockwise.

Batting average = hits \div at-bats

Batting average is then rounded to the nearest thousandth.

Erin has 30 at-bats. She has a batting average of 0.600. How many hits does she have?

Name: _____

		+		+		x		=	
+	C	A	?	C					60
+	C	C	A	A					47
=	C	B	A	C					70
	33	20	14	27					

Equations and Hints:

Each letter is a whole number.

Fill in the equations using the chart:

$$C + B + A \times C = 70 \quad C + C + A \times \underline{\hspace{1cm}} = 47$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = 20 \quad \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = 27$$

$$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = 33$$

Additional hints:

$$B < 11 \quad A = B + 1$$

Solve:

$$? = \underline{\hspace{1cm}}$$

☐

I did page 9

☐I decided to skip this page
edHelper

Name: _____

How much cement is needed to build a sidewalk that is eight hundred five feet long, four feet wide and five inches thick? Round your answer to the nearest cubic foot.

Rosa made 4 out of 16 shots from the floor during her basketball game. Her friend Emily did twice as well. Between the two of them, they made 45 shots. Express Emily's results on shots from the floor as a fraction.

If the probability that a chicken will cross the road is one-fourth, then what is the ratio that the chicken will cross the road to the chicken will not cross the road? _____ to _____

Sarah is trying a new fuel formula in her go-kart. In her first trial, fuel mixture A resulted in a maximum speed of 24 miles per hour on a flat smooth road. On the same road, mixture B resulted in a maximum speed of 54 miles per hour. Mixture B appears to increase the maximum speed of the go-kart by what factor? Express your answer as a ratio of speeds.

If a solution of MgCl is $\frac{3}{4}$ M, what will its concentration be if it is diluted by 12%?
Express your answer as a fraction.

In the local coed softball league, the male to female ratio is 6:5. If there are 95 players in the league, how many are female?

Catharina's father harvests eighty-four ears of maize every hour. How many ears does he harvest in half of an hour?

"They" are found on Mars, Venus, and Earth. As far as is known there are forty-four of "them." If fourteen are on Mars, and ten are on Earth, what fraction of "them" are on Venus?

Name: _____

The Z-Globe industrial league hockey team is doing pretty well this year. So far, Hunter has scored 4 goals, Kevin has scored 4 goals, and Ava has scored 2 goals. If, by the end of the season, Kevin triples his goals, Hunter doubles his, and Ava quadruples hers, how many goals will they have scored?

Moh's hardness scale ranges from 1 to 10 and describes different minerals in terms of their hardness. Gypsum is the softest mineral on the scale (hardness of 1) and diamond is the hardest mineral on the scale (hardness of 10). In a collection of 10 minerals, each with an integer hardness value different from any other mineral in the collection, what is the probability of randomly choosing a mineral from the collection that has a hardness greater than 8 ?

Connor is the starting goalie for the Littleville hockey team. He averages only 1.4 goals per game. He stops an average of 21.2 shots per game. Based on the average, about what percent of the shots on goal does he stop from entering the net? Round your answer to the nearest tenth of a percent.

If the ratio of saturated to unsaturated fatty acids in a cell membrane is 9 to 1, and there are a total of 78 billion fatty acid molecules, how many of them are saturated?

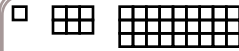
If twenty-two and one hundredth percent of the volume of gas in a storage tank is oxygen, then all the other gases in the tank make up what percent of the volume of the gases in the tank?

For every five hundred thousand pounds of fertilizer manufactured at Bigearth, Inc., about 400 pounds are ruined by being accidentally left out in the rain. Last month, 250 pounds were ruined. Based on this information, estimate how many pounds of fertilizer were manufactured last month. Round your answer to the nearest whole number if needed.

Name: _____

Rosa and Holly want to play Move Fast, their favorite board game. All you do is spin twice, take the sum of your two spins, and move. But if you get the same sum two times in a row, you go to the spot on the board labeled Thunderstorm. The spinner has the numbers 2, 6, and 7 on it. How many different sums are possible?

Rosa got a sum of 9 on her first move. What is the chance that she will go to Thunderstorm on her second move?



How many boxes across and how many boxes down do you think the next shape in the pattern would be. Explain why.

The hour hand on a clock started at 8 a.m. By the time the hour hand on the clock moved to 6 p.m., how many degrees did it move?

Maria is working on a computer program. She created a variable and set its initial value to 0.3. Then she made a loop. In the loop, she multiplies the variable by 3 and prints the current value. Here is the program.

```
my_variable = 0.3
count = 0
while (count < 4):
    count = count + 1
    my_variable = my_variable * 3
    print (my_variable, "\n")
```

What will this computer program print?

Page 1 Answers

- 1 10 feet wide by 14 feet long
- 2 192 square mm (12 mm by 16 mm)
- 3 19 and 20
- 4 860 feet (43 feet wide by 387 feet long)

Page 3 Answers

- 1 24 days
- 2 $3\frac{68}{311}$ days
- 3 3:38 p.m. (It would take them about 1 hour)
- 4 4 hours

Page 5 Answers

- 1 30
- 2 14
- 3 22
- 4 15

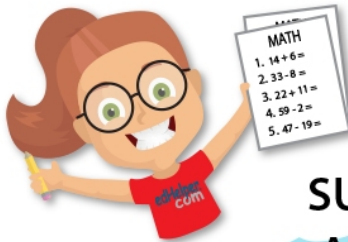
Page 6 Answers

- 1 21 minutes
- 2 9 games
- 3 190
- 4 38 hits

Subscribe to Get Answer Keys



and Weekly Math, Challenge Workbooks, Posters, Daily Reading, and so much more!



SUBSCRIBE TO RECEIVE EVEN MORE
Answer Keys • Effective Activities • Access
to as many printables as you need!



edHelper.com



It's NO PREP at edHelper.

More history!



edHelper.com!



New online math games!



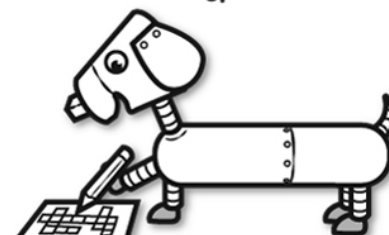
New ideas!



More science!



More puzzles!



edHelper

Easy to print!

Weekly K-6
"Take It Home"
Books

Kids want choices for homework. "Take It Home" books have fun graphics and challenging puzzles and problems for older kids.

Homework
will never be
the same!

edHelper.com

"Dr. Programmer" challenges kids..