Math Challenge

My Name: _____

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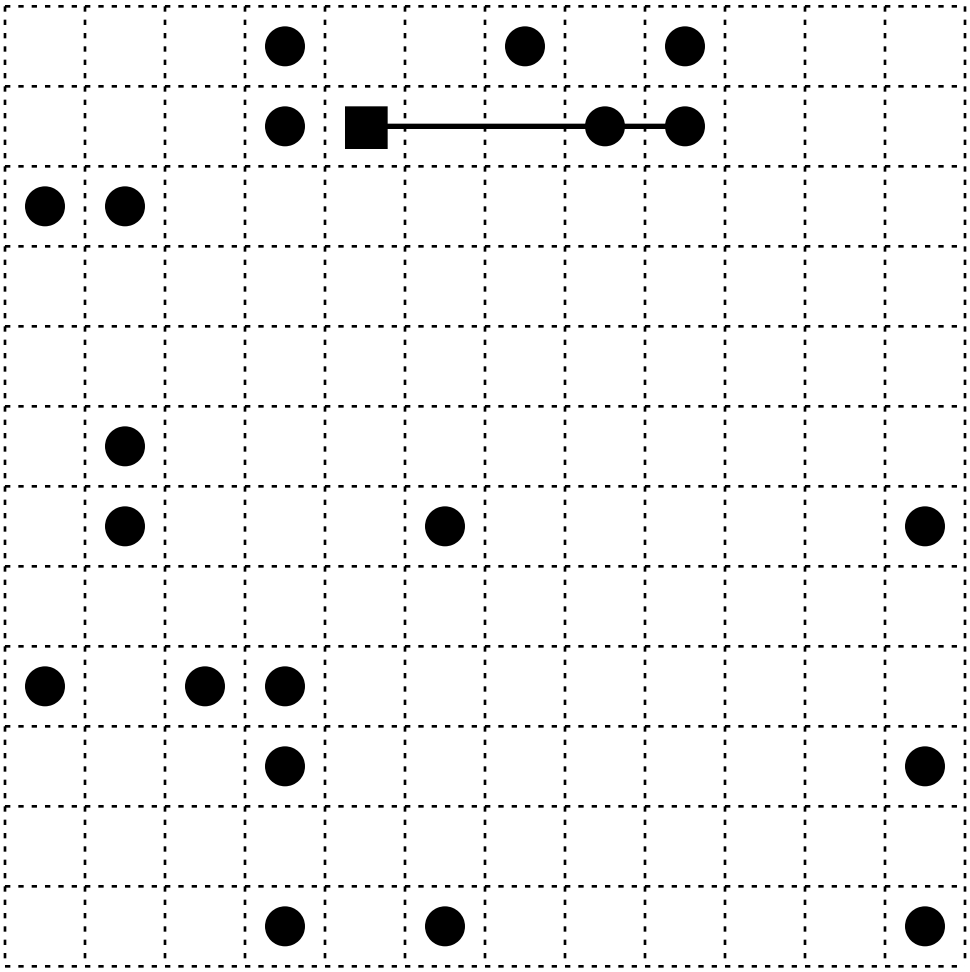
Start on the square. Draw exactly 11 lines without picking up your pencil to connect all the circles.



Name: _____

Nicole has 4 liters of a mixture containing 45% of boric acid. How much water must be added to make the mixture 40% boric acid?

The Isaac and Morgan's Ice Cream store sells ice cream shakes made of ice cream and milk. The milk used has 5% fat and the ice cream has 30% fat. Emma is in charge of making shakes. Today's mix had a total of 20% fat. If Emma used 6 quarts of milk, how many quarts does the entire mixture contain?

At EdHelper Coffee, one kind of coffee sells for $1.49 a cup and another sells for $2.75 a cup. How much of each coffee should be used to make 21 cups of a coffee mixture which sells for $2.21 a cup?

Madison has 4 liters of 69% acid. How much water should she add to make a solution that is 23% acid?

☐ I did page 2 ☐ I decided to skip this page

edHelper

Name: _____

Get a fidget spinner! Spin it. **I needed to spin _____ time(s) to finish.**

What is 50% of 1,212?

What 6 coins add up to 72 cents?

How many centimeters in 3.9 meters?

How many meters are there in 75 kilometers?

D, F, F, G, H, H, J,

_____, L, J, N, K

The perimeter of a rectangle is 22 cm. The longer side is 8 cm. How long is the shorter side?

$12 + 10 \cdot 7 + 3$

$\frac{3}{12} \div \frac{2}{24} =$

Simplify.

$\frac{9,900}{13,200} =$

Rewrite $\frac{14}{25}$ as a decimal.

$3 + 117 \div 9 - 48 \div 4 =$

$|-7| + t = 2$

$t =$

Name: _____

Samantha sees Morgan $\frac{1}{2}$ of a mile away. Morgan is riding her bicycle towards Samantha at four miles per hour. How much time will it take Morgan to reach Samantha?

Sarah lives twenty-six miles from work. During the summer, she rides her bike at five mph to the metro station. She then takes the metro to work, which travels at thirty-seven mph. If she spends thirty-nine minutes less on the metro than on her bike, what is the distance from her house to the metro?

Taylor booked EdHelper Airlines flight C3044 from Chicago to New York. The flight departs at 9:31 a.m. EdHelper Airlines frequent flyer program gives 2 miles for each mile flown on this flight. Since Taylor purchased the ticket on-line, Taylor will also receive seven hundred bonus miles. Taylor will earn a total of 2,500 miles for this flight. The plane is set to arrive at 12:51 p.m. What speed should the plane average for the plane to arrive on time?

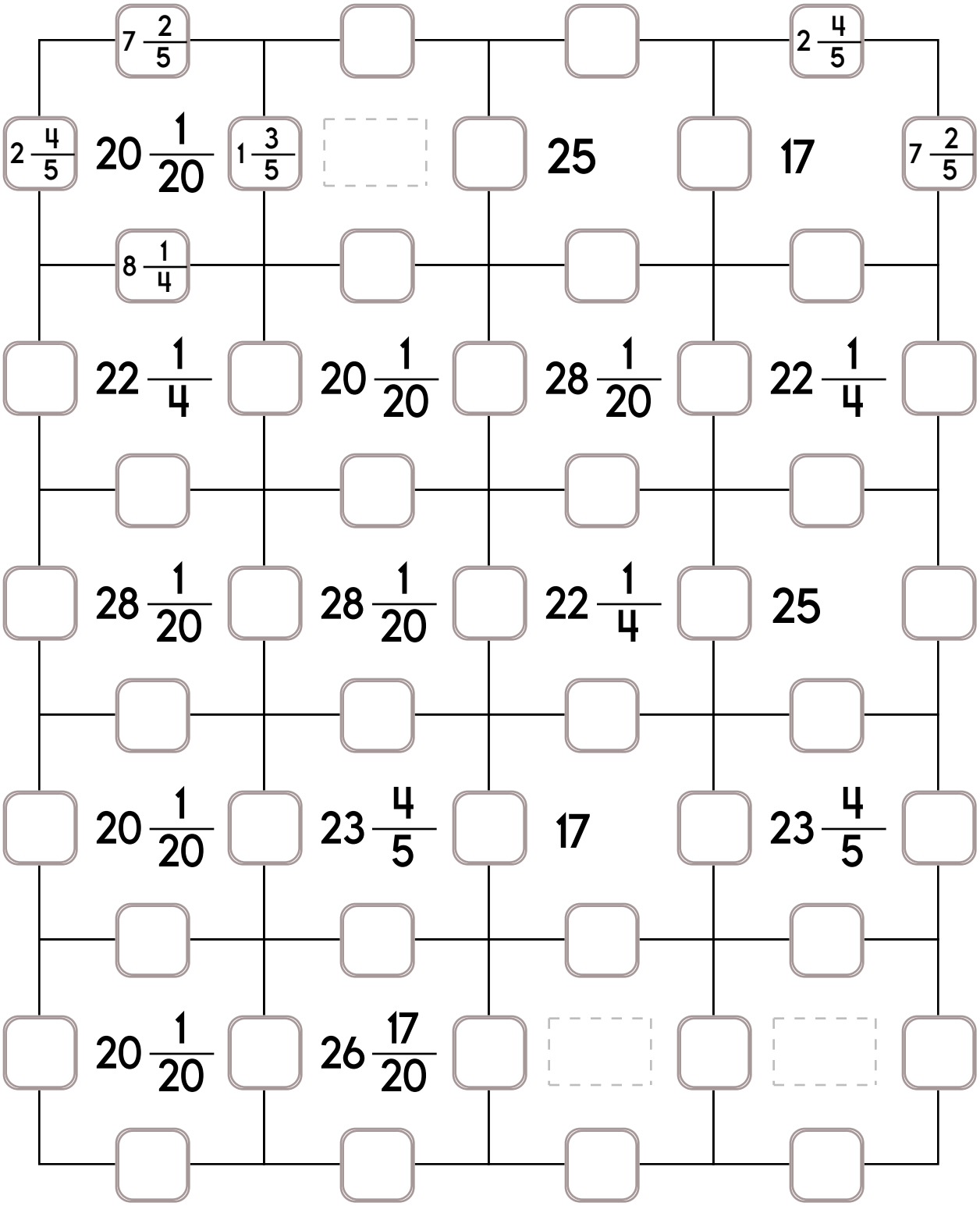
Hailey left Miami and drove at a speed of 45 mph. Rachel left 2 hours and 49 minutes later and drove at a speed of 56 mph. How long will it take Rachel to catch up with Hailey?

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: $5\frac{1}{5}$, $8\frac{1}{4}$, or $4\frac{5}{8}$.

The other three numbers have to all be DIFFERENT and must be from these: $7\frac{2}{5}$, $1\frac{3}{5}$, $2\frac{4}{5}$, or $9\frac{3}{5}$.



Name: _____

Danielle has four times as many pennies as quarters. The total value of the coins is $2.02. How many of each coin does she have?

David has a total of one hundred fifty-eight pennies, nickels, and quarters. He has a total of $13.34. He has sixteen more pennies than quarters and twelve more nickels than pennies. How many of each coin does he have?

A cop was hidden behind a tree and clocked a Ford going by at fifty kph. $\frac{3}{4}$ of an hour later, the cop clocked a Honda passing by at seventy-three kph. If the two cars continue at the same speed, how far will the Honda travel in order to catch up with the Ford from the point that the cop hid?

Andrew has a total of two hundred twenty-two pennies, dimes, and quarters. He has a total of $35.52. He has three times as many quarters as pennies and one-half as many pennies as dimes. How many of each coin does he have?

Name: _____

Kevin, who weighs one hundred seventy-eight pounds, sat five feet from the center of a seesaw. Taylor sat eight hundred ninety feet on the other side of the center to balance the seesaw. How much does Taylor weigh?

A small town has averaged 1.9 inches of rain per month from January to May. What must be the average monthly rainfall from June to December so that the average rainfall for the entire year will be approximately 2.08 inches per month?

The theater manager calculated the total revenue for the night to be $4,188.50. A total of 594 movie tickets and popcorn were sold. If movie tickets cost $7.75 each and popcorn costs $3.60, how many movie tickets were sold?

Madison went to EdHelper Outlet to take advantage of a huge sale. Shoes were on sale for $36.99 per pair and socks were only $4.49 per pair. Madison bought fifteen items for a total of $229.85. How many pairs of socks did she buy?

Name: _____

If you take the first number and subtract it by the second, the difference is 27.

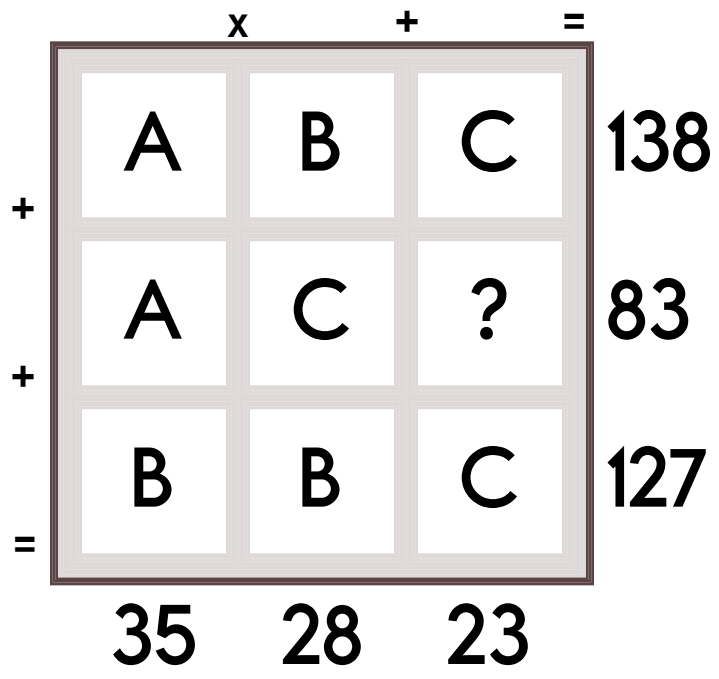
What are the two numbers?

Give two answers for x in each equation.

$$|\,8 + x\,| = 26$$

$$|\,-8 - x\,| = 13$$

Name: _____



Equations and Hints:

Each letter is a whole number.

Fill in the equations using the chart:

B + C + B = 28 A x B + C = __ __ x __ + __ = 127

__ + __ + __ = 35

Additional hints:

C < 13 B = C + 5

Show Work:

Solve:

? = __

Name: _____

Mr. Hawkins had received two hundred acres as his headright when he came to the Plymouth Colony. He gave one-sixth of his land to his brother. How many acres did he have left?

Alex used the method of Archimedes to determine the volume of some twigs he was using in an experiment. The class was comparing the densities of different kinds of wood. He measured the volume of 10 twigs and found the average volume was 3.2 ml. Before he completed the calculations, he discarded one measurement because he thought the twig was the wrong species. After discarding the twig he obtained, the new average volume was 2.7 ml. What must have been the volume of the twig he discarded?

Mr. Blake is preparing to give some land to his grandchildren. He has twelve grandchildren and two hundred fifteen acres of land to give away. He wants to give them all an equal amount. How many acres should each grandchild get? (State your answer as a mixed fraction.)

At Mr. Bloop's summer sports camp, $\frac{1}{8}$ of the total participants came to learn about soccer. The rest came to learn about other sports. If 118 participants showed up, how many were not there to learn about soccer?

If lava flows out of Mount Gustaffson at a rate of 45 cubic meters per day, how much lava will have flowed out after 9 weeks?

Uncle Joe made chocolate chip cookies. Peter ate fifty percent of them right away. Justin ate fifty percent of what was left. Twelve cookies remain. How many cookies did Uncle Joe make?

Name: _____

Erin and her father went to Paulo's Pizzeria for pizza with everything except anchovies. The pizza was divided into six slices. Erin's father ate two-thirds of the pizza. Erin ate the rest. How many slices of pizza did Erin eat?

At ski slope A, the change in elevation from the top of the run to the finish is -1,000 meters. At ski slope B the change is -1,300 meters. If slope A is 800 meters long and slope B is 1,300 meters long what is the elevation-drop-per-meter ratio between slope A and B?

Mary is a good pitcher for the Littleville softball team. During a recent practice she measured her pitch velocity using a radar gun. She pitched 9 balls a distance of 40 feet. The speeds measured were 47, 36, 35, 38, 40, 37, 46, 48, and 42 miles per hour, respectively. What was the average time it took the balls to travel the 40 feet? Round your answer to the nearest hundredth of a second.

Jenna just finished painting the smallest wall in her room. It took her 2 hours and 27 minutes and she was able to paint at a rate of forty-one square feet per hour. If the wall is fourteen feet long, how tall is it? Round your answer to the nearest foot.

Eric bought a die at the magic shop. He rolls it 174 times and gets the following results. A 1 twenty-four times, a 2 thirty-three times, a 3 thirty-four times, a 4 thirty-five times, a 5 twenty-three times and a 6 twenty-five times. What is the probability he will get a 6 on the next roll?

Adam measures the lengths of seven fossil mosquitoes preserved in amber. Their lengths are 2.5, 3.4, 1.5, 1.4, 1.5, 3.3, and 3.6 mm. What is their average length? Round your answer to the nearest thousandth.

Page 1 Answers

1. $\frac{1}{2}$ liters
2. 15 quarts
3. 9 cups of the $1.49 coffee and 12 cups of the $2.75 coffee.
4. 8 liters

Page 2 Answers

Page 3 Answers

1. 450 seconds ($7\frac{1}{2}$ minutes)
2. 6 miles
3. 271 mph
4. $\frac{1}{0}$ hours, or approximately 1 minute

Page 5 Answers

1. twenty-eight pennies and seven quarters
2. fifty-four pennies, sixty-six nickels, and thirty-eight quarters
3. 340 mph (It was 250 mph on the return trip)
4. $1\frac{13}{60}$ kilometers
5. thirty-seven pennies, seventy-four

Page 6 Answers

1. 1 pounds
2. 2.2 inches/month
3. 494 (100 orders of popcorn)
4. 10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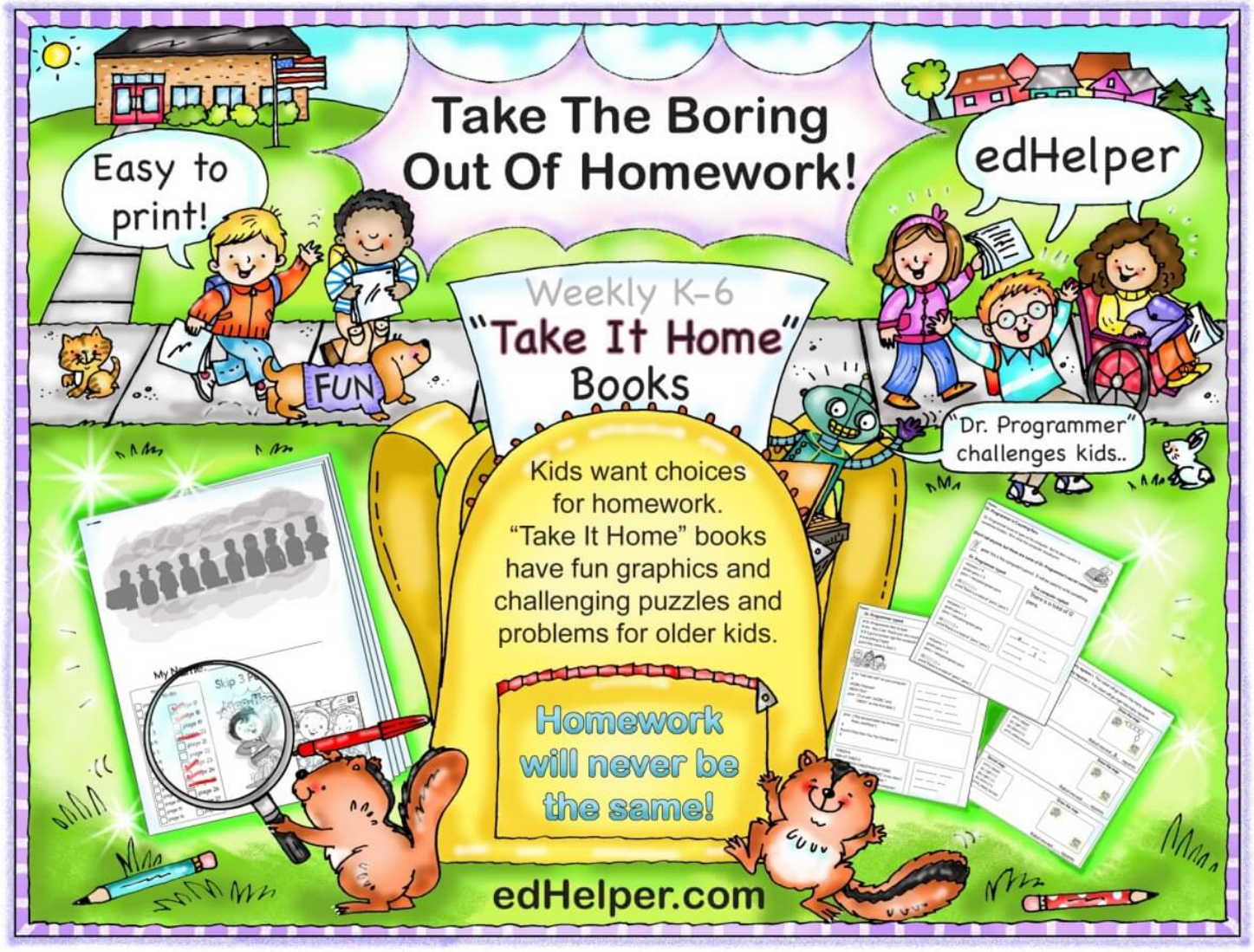
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