

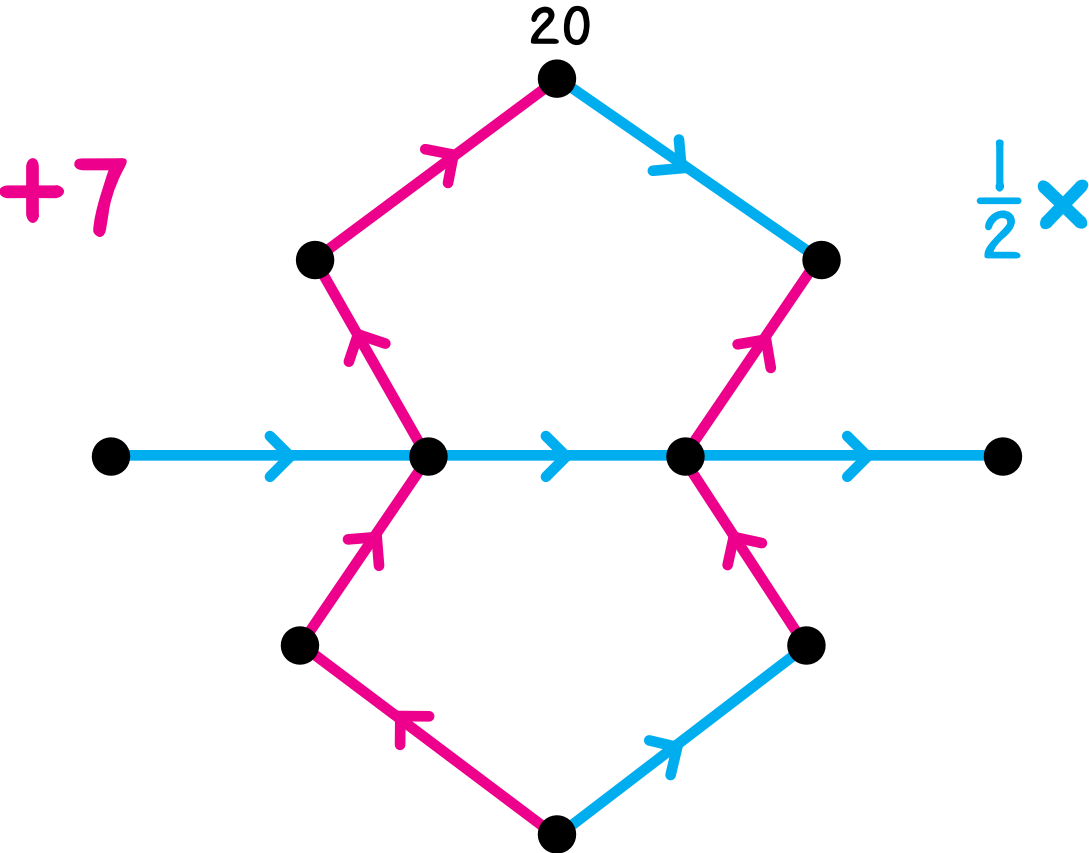
Name \_\_\_\_\_

# Collage of Problems #4

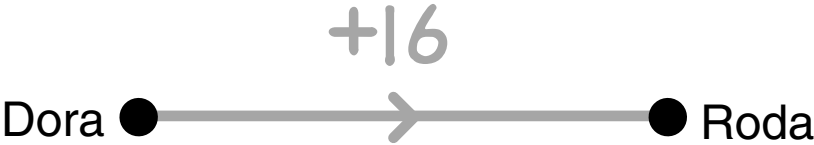
Dora and Roda are secret numbers.

Clue 1

Dora and Roda are in this arrow picture.



Clue 2



Who is Dora? \_\_\_\_\_

Who is Roda? \_\_\_\_\_

Fill in the blanks.

$$(0, \underline{\quad})$$

$$\boxed{-8}$$

$$(25, 17)$$

$$(\underline{\quad}, \widehat{5})$$

$$(\widehat{10}, \underline{\quad})$$

$$(\underline{\quad}, \frac{2}{3})$$

$$(14\frac{3}{4}, \underline{\quad})$$

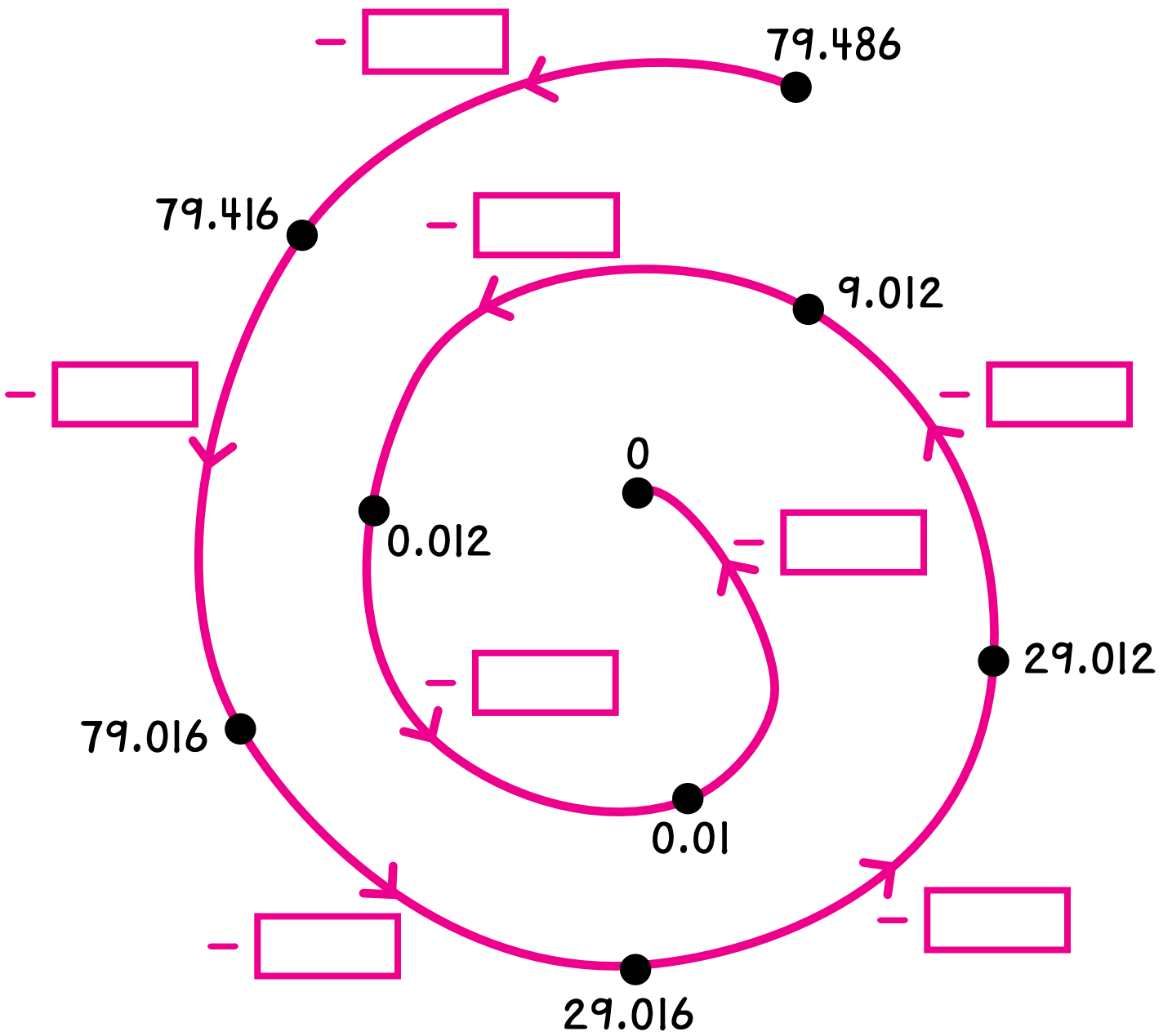
$$(19.4, \underline{\quad})$$

$$(\underline{\quad}, 23.15)$$

$$(\underline{\quad}, 1\frac{1}{2})$$

# Wipe-out

Fill in the boxes for the arrows.



Fill in each box with  $<$ ,  $>$ , or  $=$ . Try to solve these problems without doing any calculation.

$$55 \div 9 \quad \square \quad 55 \div 7$$

$$73 \div 6 \quad \square \quad 87 \div 6$$

$$23 \div 3 \quad \square \quad 230 \div 30$$

$$80\% \text{ of } 40 \quad \square \quad 20$$

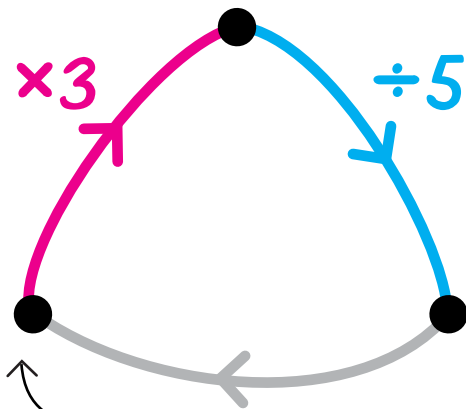
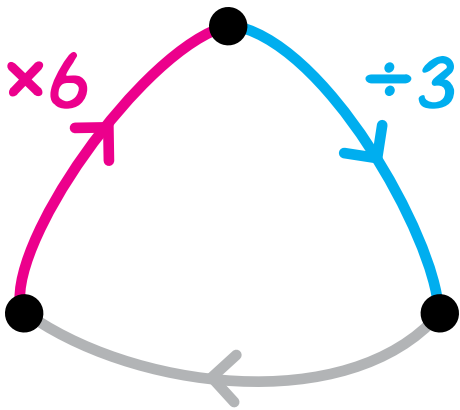
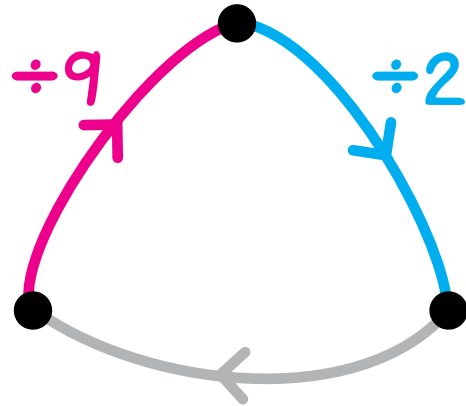
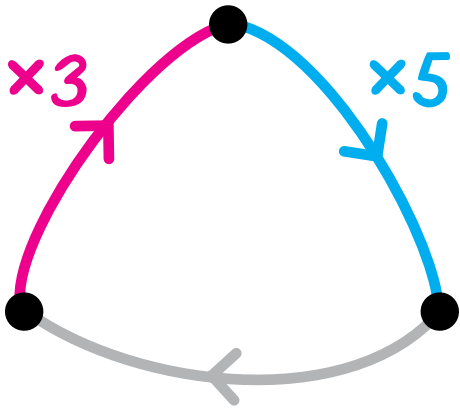
$$23\% \text{ of } 18 \quad \square \quad 18$$

$$100\% \text{ of } 37 \quad \square \quad 37$$

$$\frac{3}{2} \times 175 \quad \square \quad 175$$

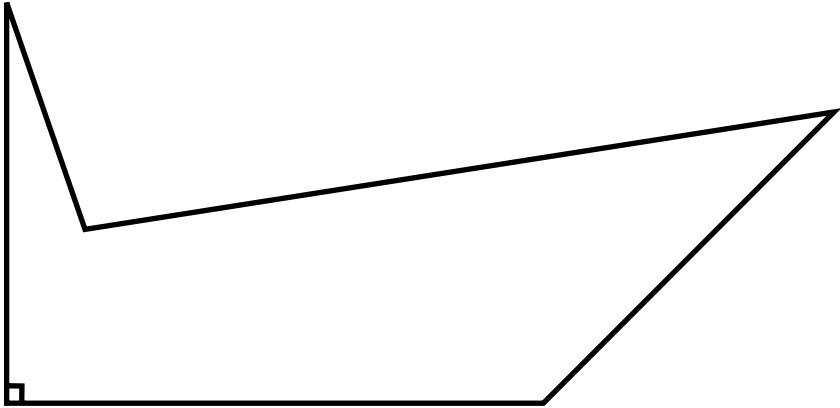
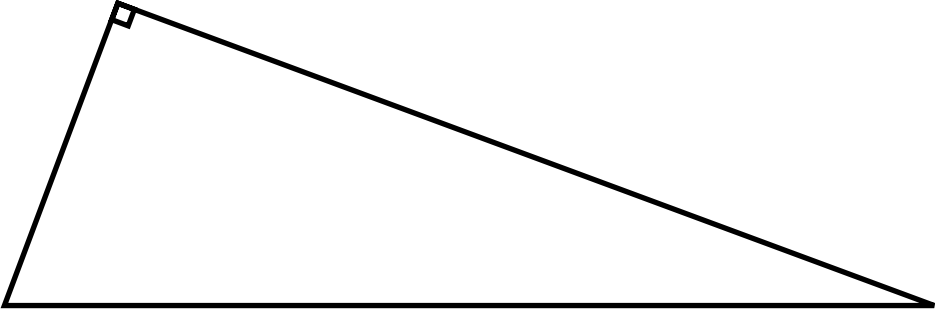
$$\frac{2}{3} \times 175 \quad \square \quad 175$$

Label the gray arrows. Try labeling the dots as a check.



Hint: Start here with a multiple of 5.

In each picture, write 1 by the vertex of the largest angle determined by the polygon; 2 by the vertex of the next largest; and so on until all of the angles are labeled. Right angles are indicated.



Put a one-digit number in each box to make the calculations correct.

$$\begin{array}{r}
 \square.7 \\
 30.\square8 \\
 7.09 \\
 + 26.5\square \\
 \hline
 \square9.73
 \end{array}$$

$$\begin{array}{r}
 \square9.60 \\
 - 2\square.\square3 \\
 \hline
 63.7\square
 \end{array}$$

Add.

$$163.7 + 38 + 84.53$$

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Subtract.

$$803.42 - 539.6$$

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Complete.

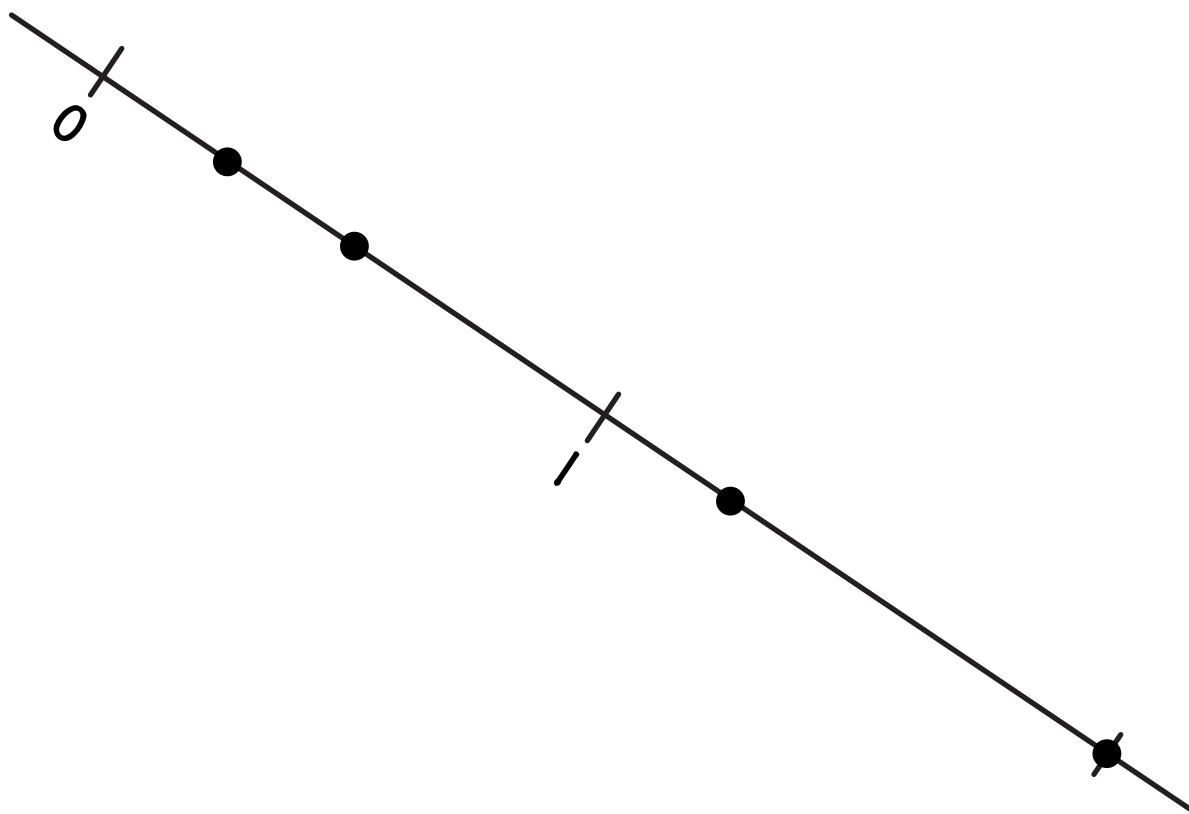
$$\frac{5}{4} + \frac{3}{4} = \underline{\hspace{2cm}}$$

$$\frac{3}{4} + \frac{1}{2} = \underline{\hspace{2cm}}$$

$$\frac{5}{4} - \frac{3}{4} = \underline{\hspace{2cm}}$$

$$\frac{3}{4} - \frac{1}{2} = \underline{\hspace{2cm}}$$

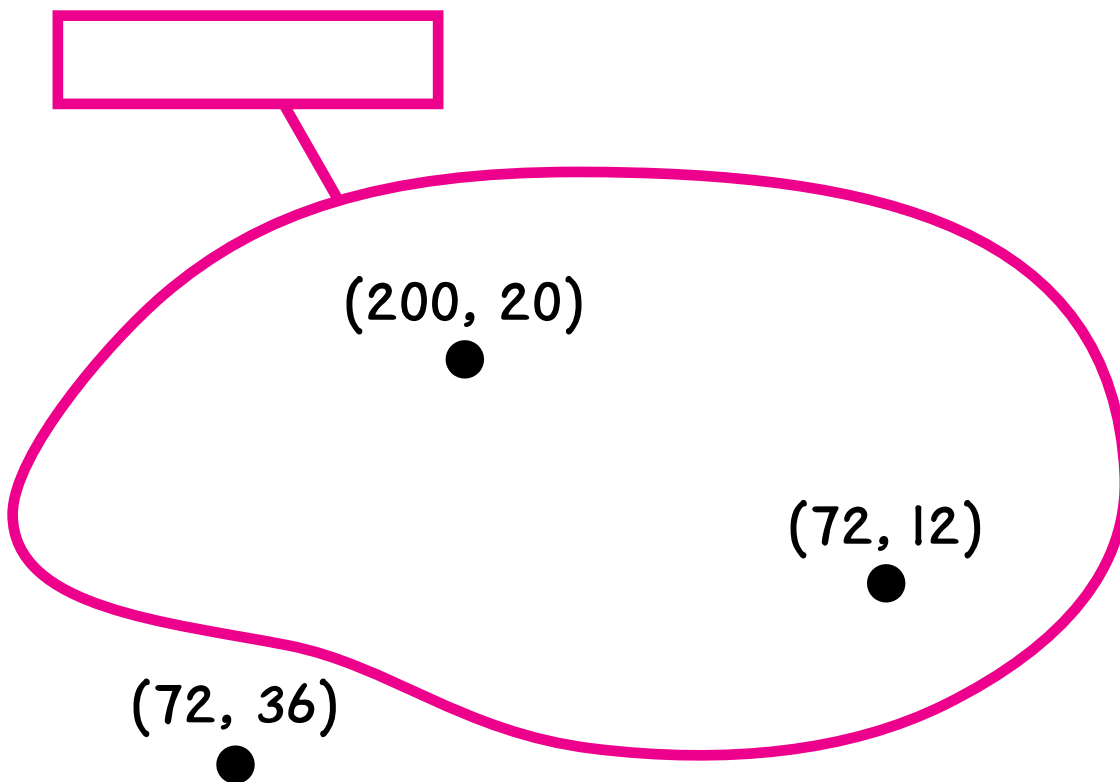
Use the numbers above to label the dots on this number line.



The red string is for one of these relations.

$\frac{1}{2} \times$	$\div 10$
is a multiple of	is greater than
$\square - 3 = \square \dots$	$\square - 5 = \square \dots$

Label the string.



Use the rounding operation  $\textcircled{R}$  to complete these problems.  
The first two are done for you.

$$11 \textcircled{R} 3 = \underline{12}$$

The nearest multiple of 3 to 11 is 12.

$$4.3 \textcircled{R} 0.5 = \underline{4.5}$$

When counting by 0.5s from 0, the closest we get to 4.3 is 4.5.

$$17 \textcircled{R} 4 = \underline{\quad}$$

$$60 \textcircled{R} 7 = \underline{\quad}$$

$$38 \textcircled{R} 5 = \underline{\quad}$$

$$172 \textcircled{R} 20 = \underline{\quad}$$

$$283 \textcircled{R} 10 = \underline{\quad}$$

$$4\,527 \textcircled{R} 10 = \underline{\quad}$$

$$283 \textcircled{R} 100 = \underline{\quad}$$

$$4\,527 \textcircled{R} 100 = \underline{\quad}$$

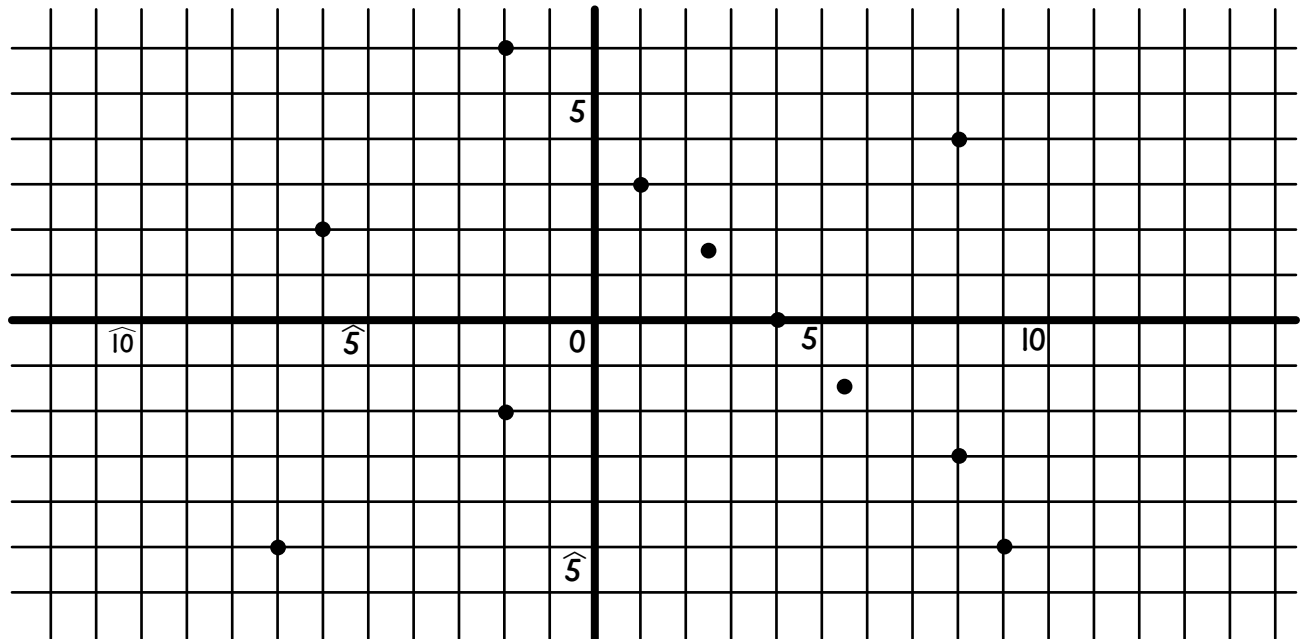
$$13.58 \textcircled{R} 1 = \underline{\quad}$$

$$7.66 \textcircled{R} 0.1 = \underline{\quad}$$

Fee and Gee are secret numbers.

Clue 1

(Fee, Gee) is one of the dots on this grid.

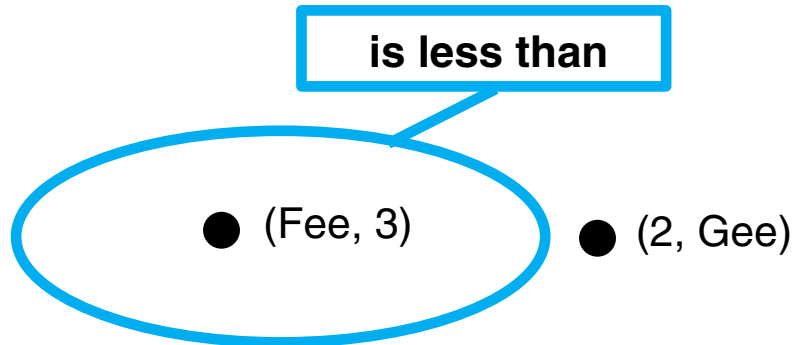


Clue 2

$$Fee + Gee = 4$$

On the grid, circle the six dots that (Fee, Gee) could be.

Clue 3



(Fee, Gee) is (\_\_\_\_\_, \_\_\_\_\_).

One number in each calculation is missing a decimal point.  
Place a decimal point in this number to make the equation true.

$$376 + 14.29 + 265.8 = 65609$$

$$408.27 + 25568 + 3862.75 = 4526.7$$

$$3461.3 - 512.76 = 294854$$

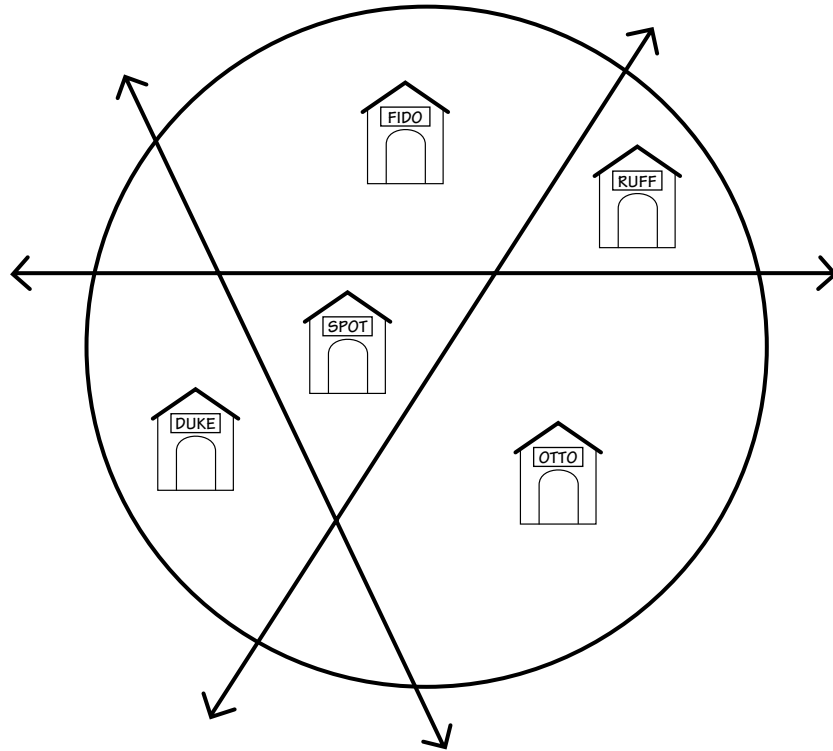
$$7.4 \times 53.27 = 394198$$

$$3135 \times 8.06 = 252.681$$

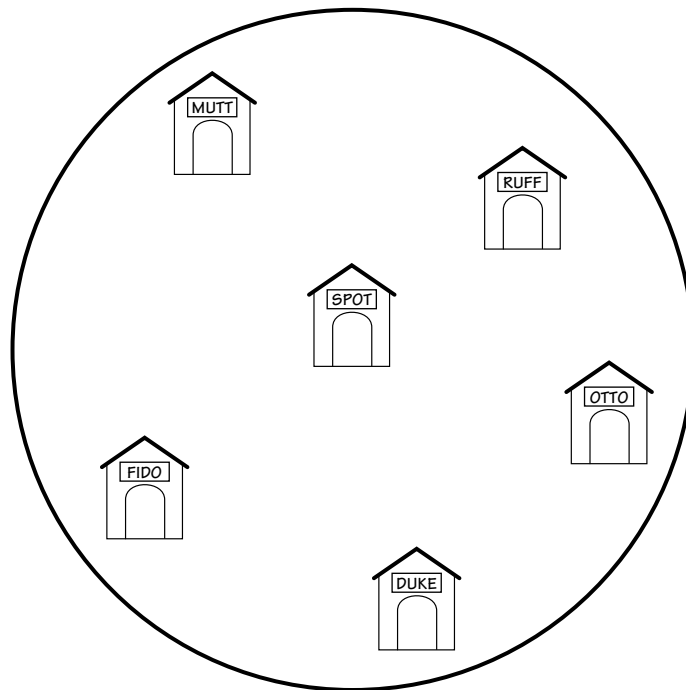
$$648.69 \div 2.1 = 3089$$

$$83.3 \div 196 = 4.25$$

Using three straight fences (lines), this circle is divided so that each dog house is in a different region.



Use three straight fences (lines) to divide this circle so that each dog house is in a different region.



Complete the calculations. Show your work.

$$\begin{array}{r} 7.36 \\ \times 1.3 \\ \hline \end{array}$$

$$97.2 \times 6.7$$

$$7 \overline{)596.4}$$

$$2356.2 \div 63$$

Pair each red tag with a blue tag.

$$\frac{5}{8} + \frac{3}{8}$$

$$\frac{3}{10}$$

$$\frac{5}{8} - \frac{3}{8}$$

$$1\frac{1}{10}$$

$$\frac{3}{5} + \frac{1}{2}$$

$$\frac{1}{4}$$

$$\frac{3}{5} - \frac{1}{2}$$

$$\frac{6}{5}$$

$$\frac{3}{5} \times \frac{1}{2}$$

$$1$$

$$\frac{3}{5} \div \frac{1}{2}$$


$$\frac{1}{10}$$








Draw as many red arrows as possible in this picture.


is less than  


$$0.5 \times 800$$


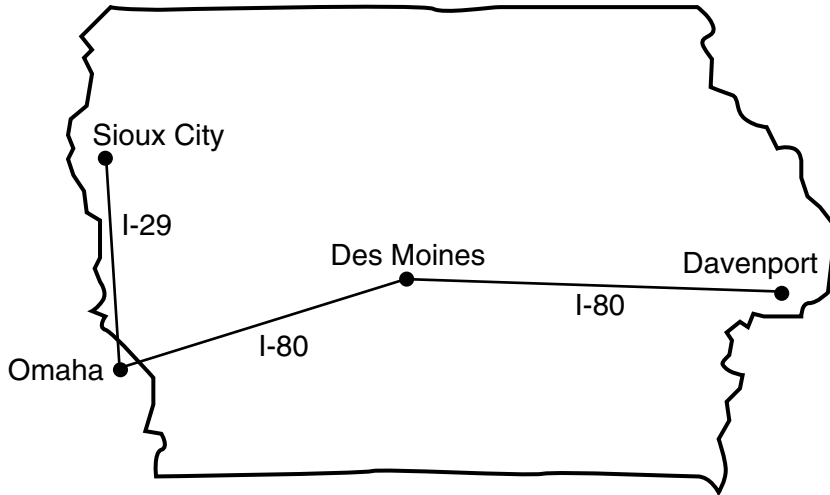
$$0.5 \times 621$$


$$1.08 \times 621$$


$$0.25 \times 800$$


$$1.08 \times 800$$


# Iowa



SCALE: 1 cm = 50 km

Complete.

	Length of Line Segment on Map	Actual Distance by Road
Davenport to Des Moines	_____ cm	_____ km
Des Moines to Omaha	_____ cm	_____ km
Omaha to Sioux City	_____ cm	_____ km

Ms. Peltin drives from Omaha to Davenport on I-80. If she averages 90 km per hour, about how long is her drive?

\_\_\_\_\_ hours

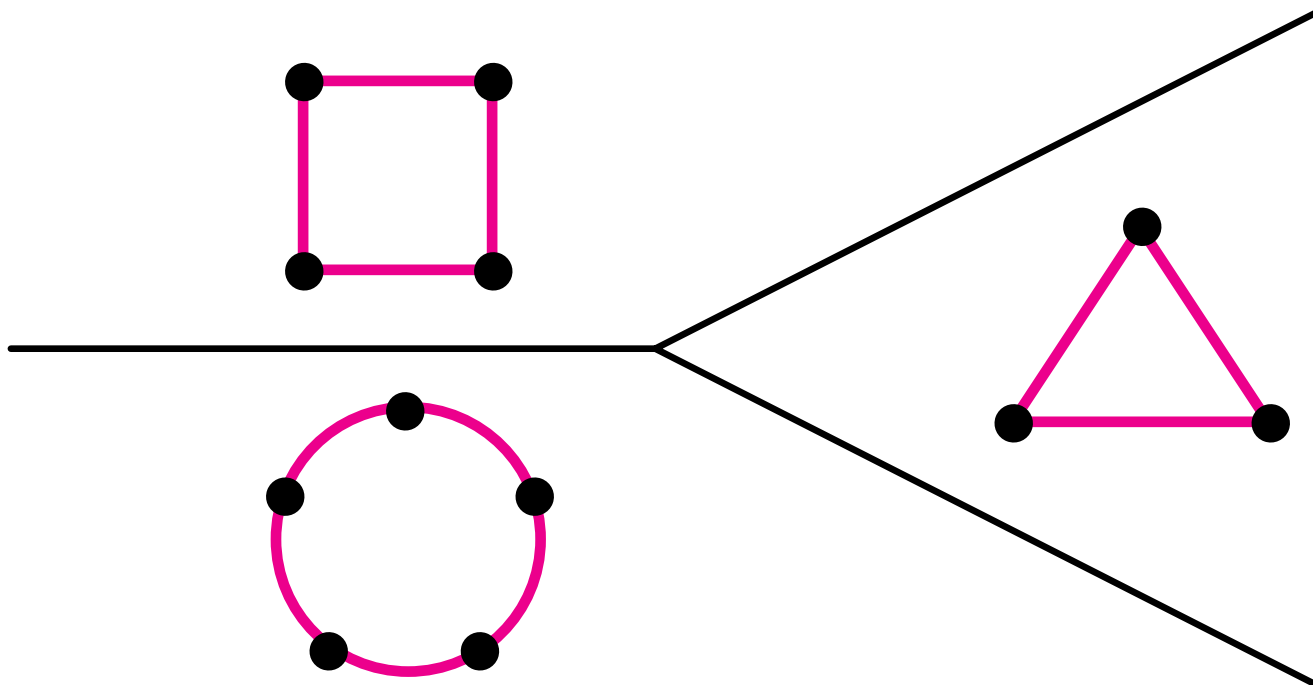
Ms. Peltin's car uses one liter of gasoline every 10 km. The gasoline costs \$0.30 for one liter. How much gasoline does she use on her trip from Omaha to Davenport? \_\_\_\_\_ liters

How much does that much gasoline cost? \_\_\_\_\_

By air, Cedar Falls is 360 km from Omaha and 185 km from Davenport. Draw and label a dot for Cedar Falls in Iowa. You may use a compass.

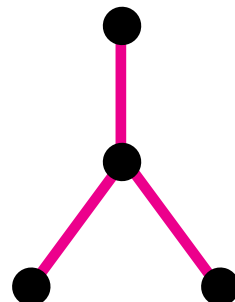
Label the dots following this rule.

Two numbers can be joined by a red cord if and only if they are relatively prime.



With your way of labeling the dots, are there more red cords that can be drawn in a picture? \_\_\_\_\_ If so, draw them.

Label the dots in this picture so that no more red cords can be drawn.



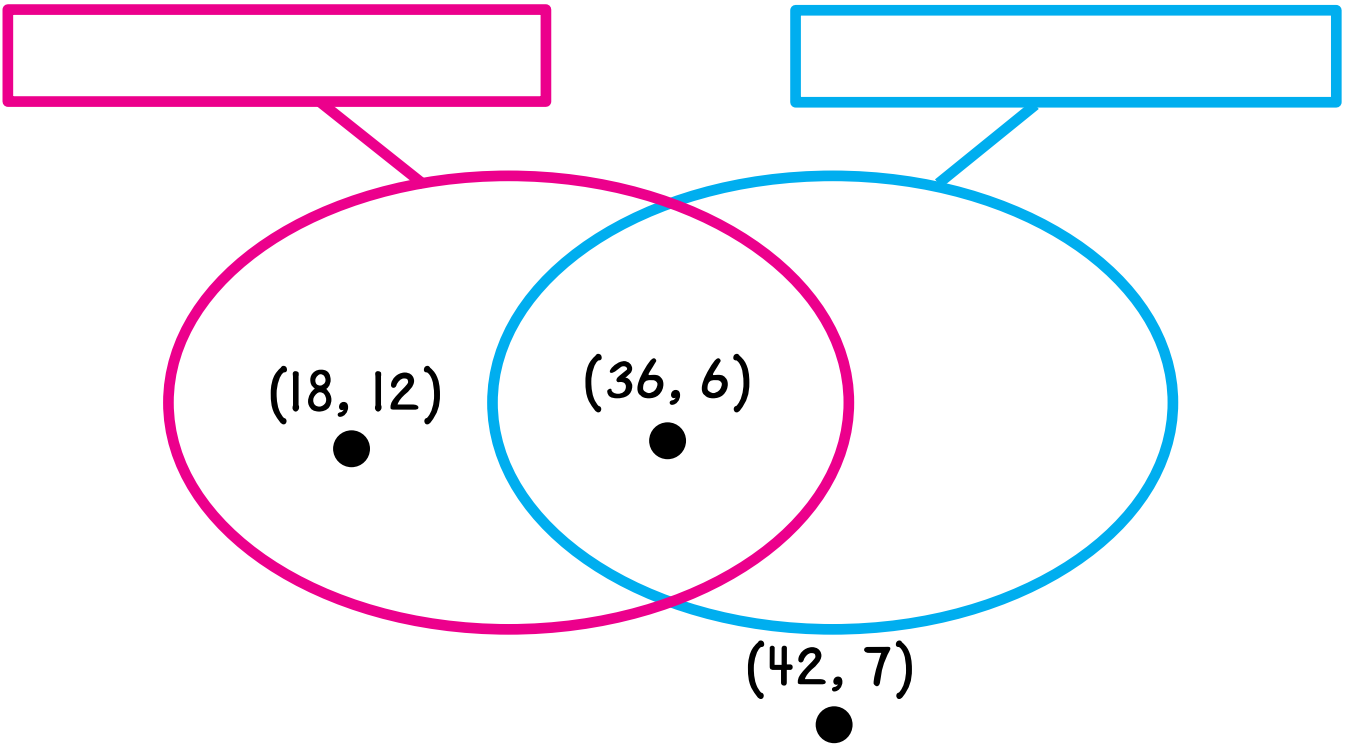
The red string is for one of these relations.

is at least 20 more than
is a multiple of
is the square of
$\frac{2}{3} \times$
$\square - 2 \square = \dots$
$\square - 4 \square = \dots$

The blue string is for one of these relations.

is at least 20 more than
is a multiple of
is the square of
$\frac{2}{3} \times$
$\square - 2 \square = \dots$
$\square - 4 \square = \dots$

Label the strings.

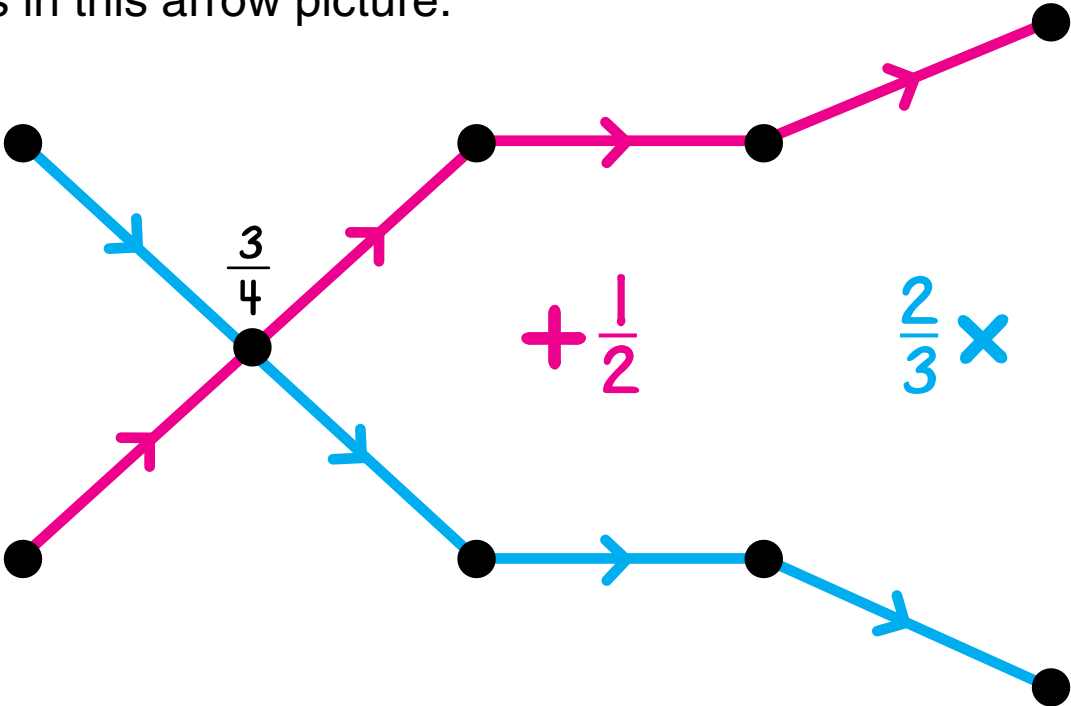




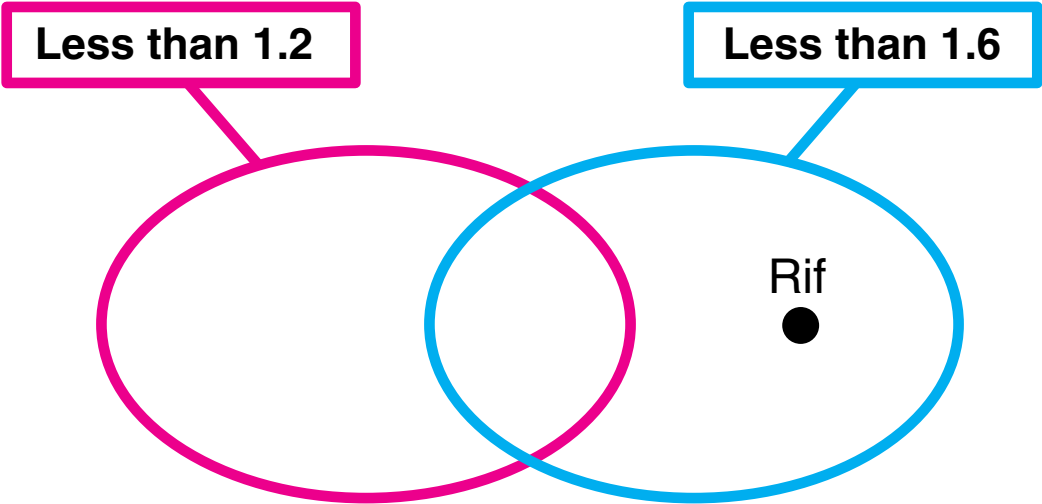
Rif is a secret number.

Clue 1

Rif is in this arrow picture.

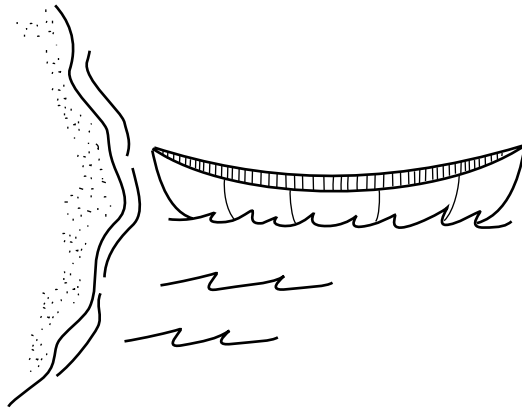
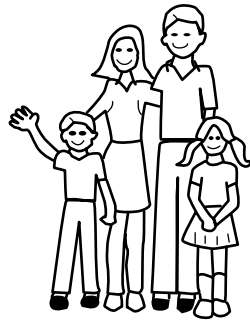


Clue 2



Who is Rif? \_\_\_\_\_

Mr. and Mrs. Harris and their two children, Audrey and Glen, must cross a river. The only boat available is a small canoe which can hold at most one adult or the two children. All of the Harris' know how to paddle the canoe. Describe how the family can use the canoe to cross the river. The alligators in the river prevent anyone from swimming. Try to use as few trips as possible.



Above each arrow, indicate who is in the boat. You may not need to use all of the arrows.

First trip across →

First return trip ←

Second trip across →

Second return trip ←

Third trip across →

Third return trip ←

Fourth trip across →

Fourth return trip ←

Fifth trip across →

Fifth return trip ←

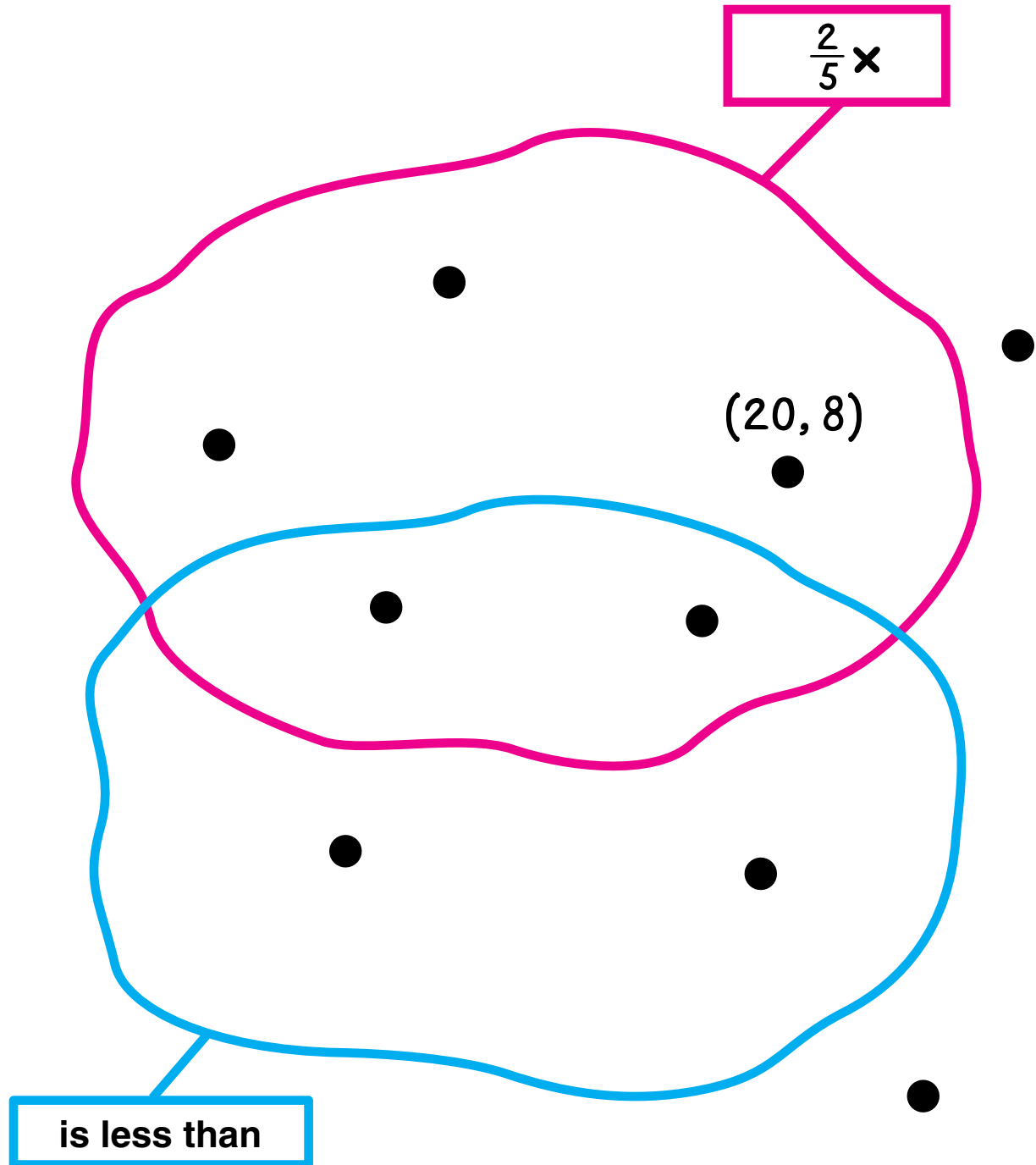
Sixth trip across →

Sixth return trip ←

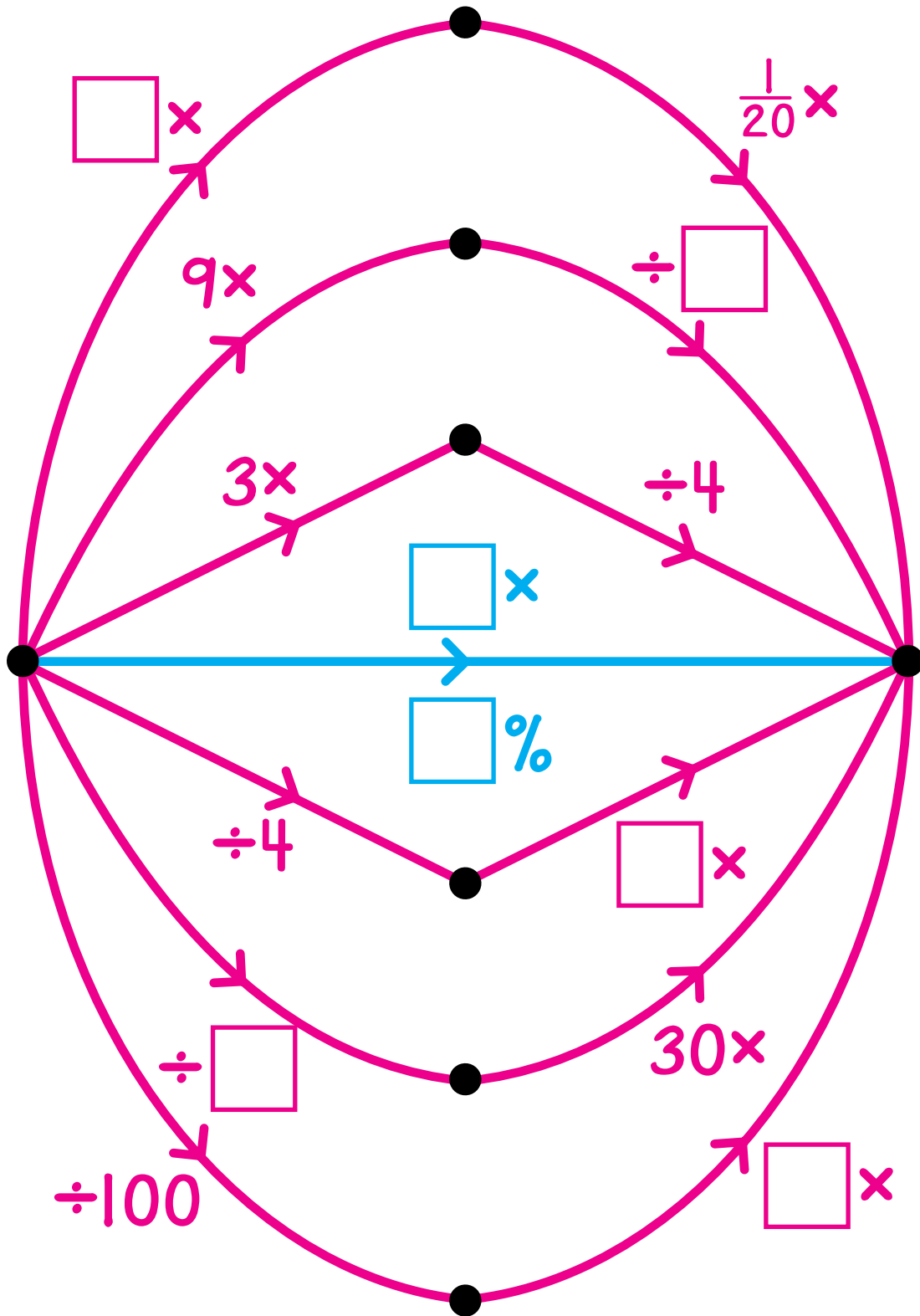
Seventh trip across →



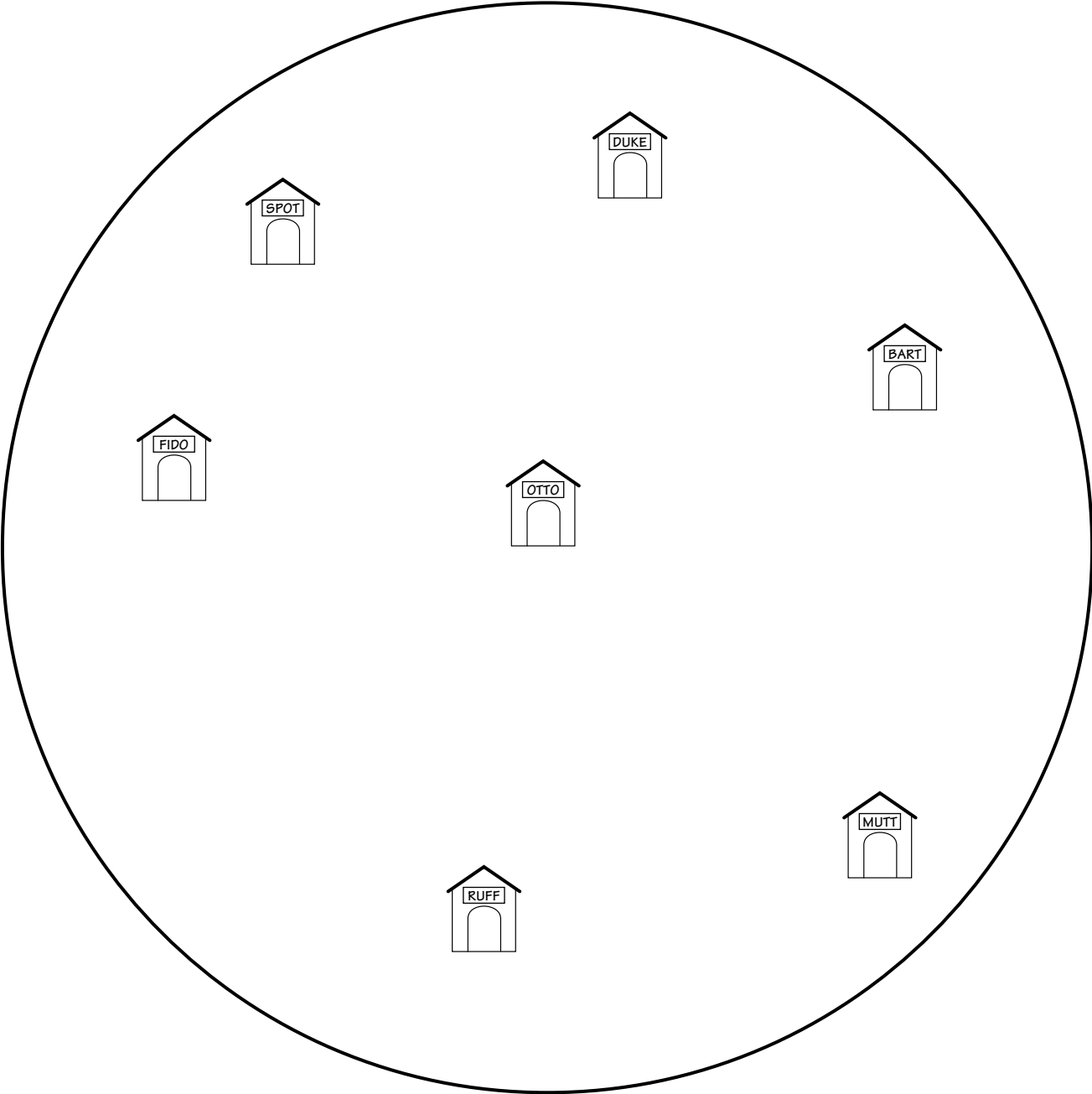
The dots are for ordered pairs of numbers.  
Label the dots. One is done for you. Many solutions are possible.  
Hint: Some ordered pairs require negative numbers.



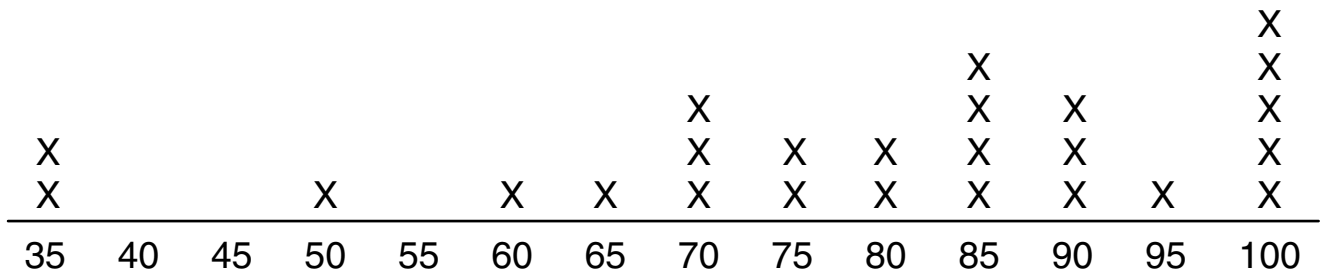
Fill in the boxes for the arrows.



Use three straight fences (lines) to divide this circle so that each dog house is in a different region.



Test scores for Ms. Dozier's class are pictured below. Find the mean, median, and mode for the class. Which type of average (mean, median, or mode) best describes the class's performance on the test? Explain your answer.



Mean \_\_\_\_\_

Median \_\_\_\_\_

Mode \_\_\_\_\_

Put these numbers in the string picture.

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

$$\frac{3}{5} \times \frac{5}{4}$$

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

25% of 10

20% of 7

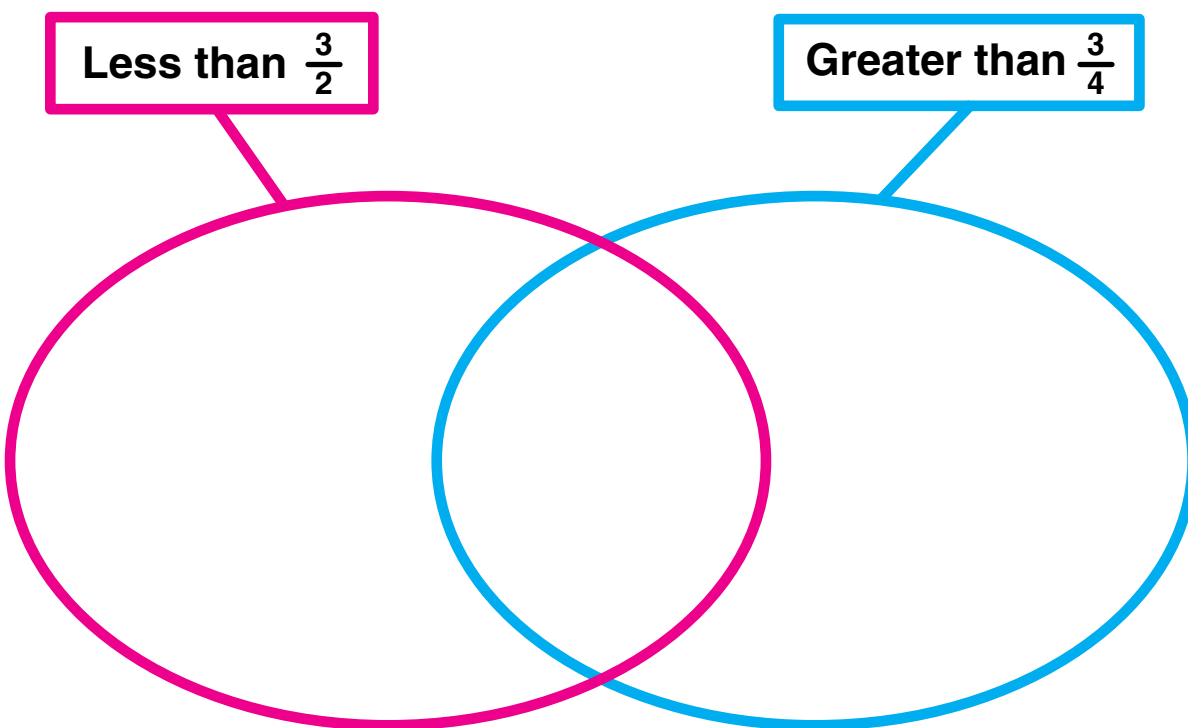
$$\frac{7}{8} - \frac{1}{4}$$

$$\frac{1}{8} \div \frac{1}{7}$$

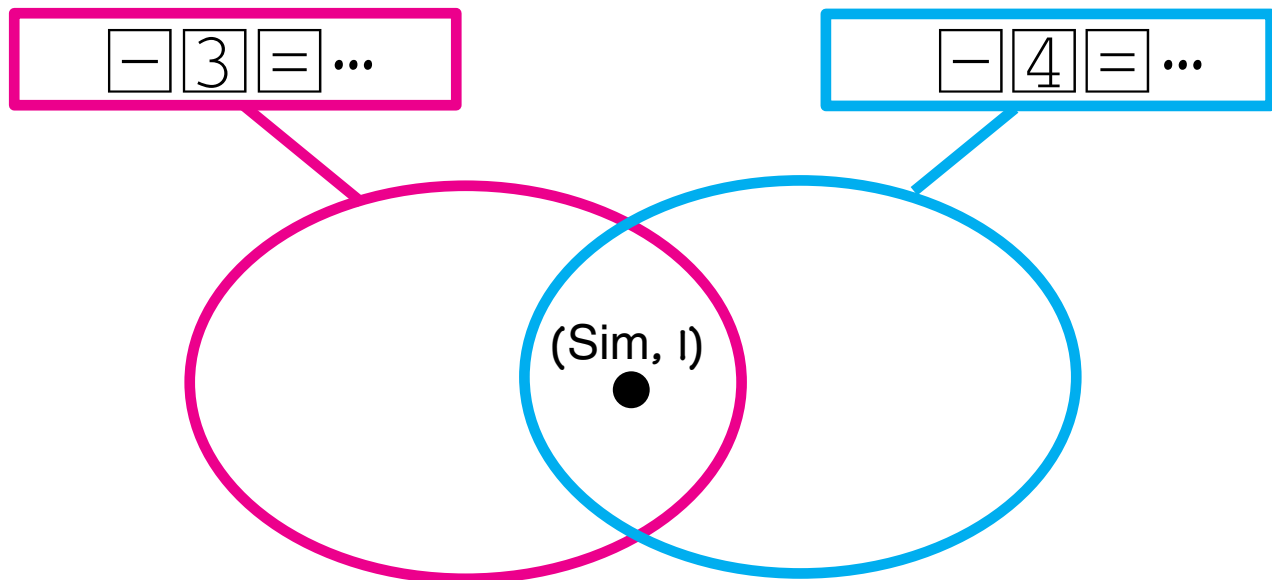
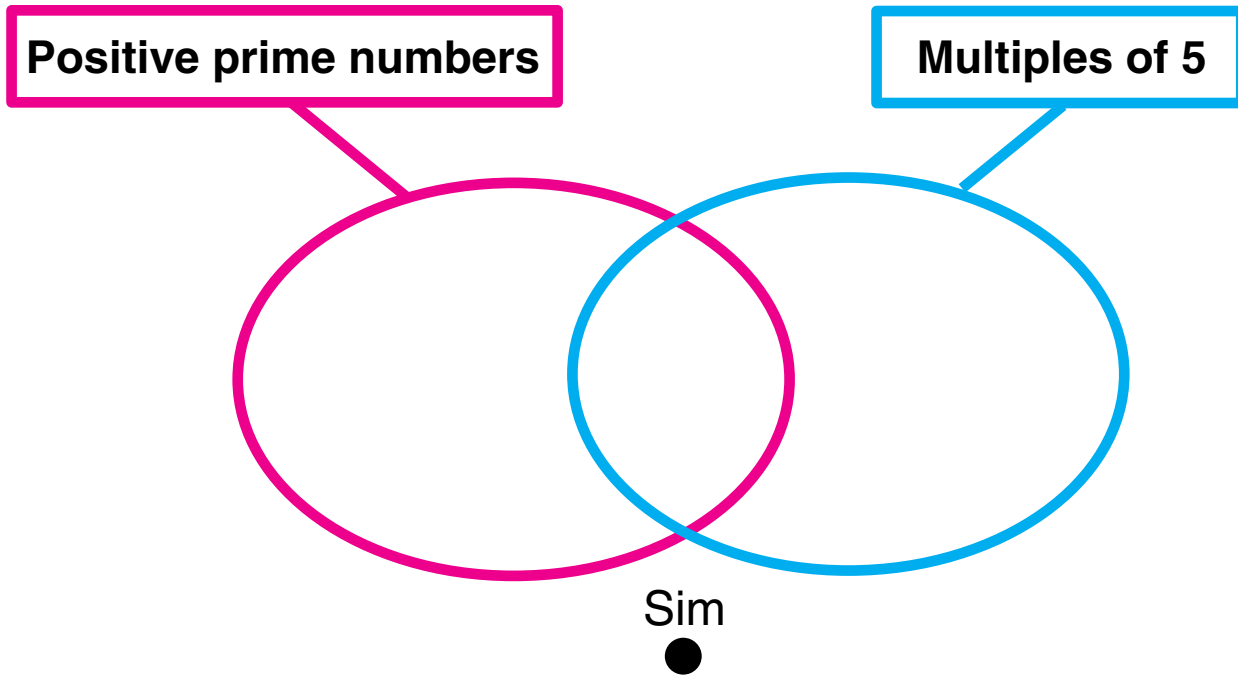
$$\frac{2}{5} \div \frac{4}{5}$$

$$1 + \frac{2}{3}$$

$$2 - \frac{2}{3}$$



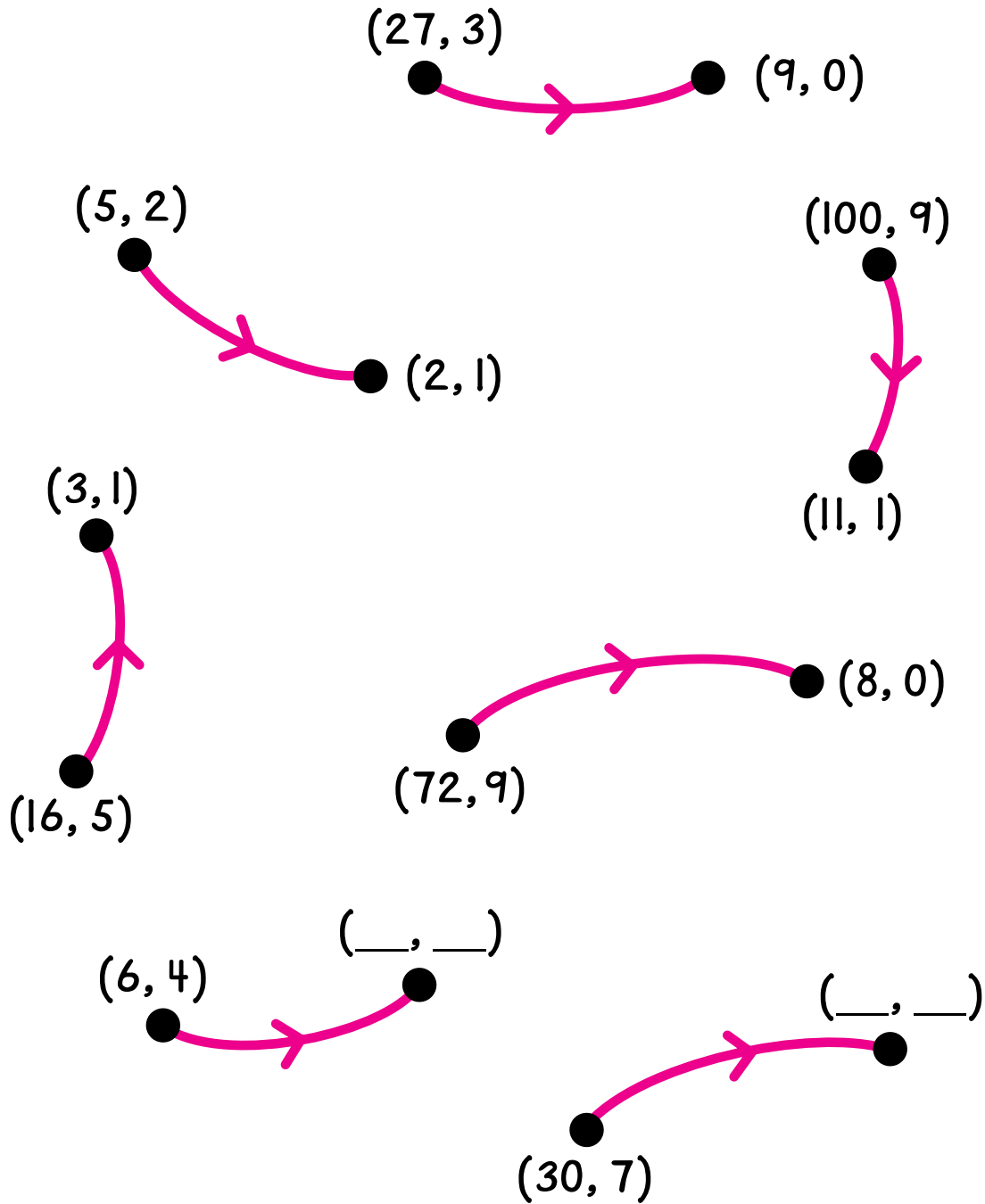
Sim is a secret number between 2 and 80.



Who is Sim? \_\_\_\_\_

What could the red arrows be for? \_\_\_\_\_

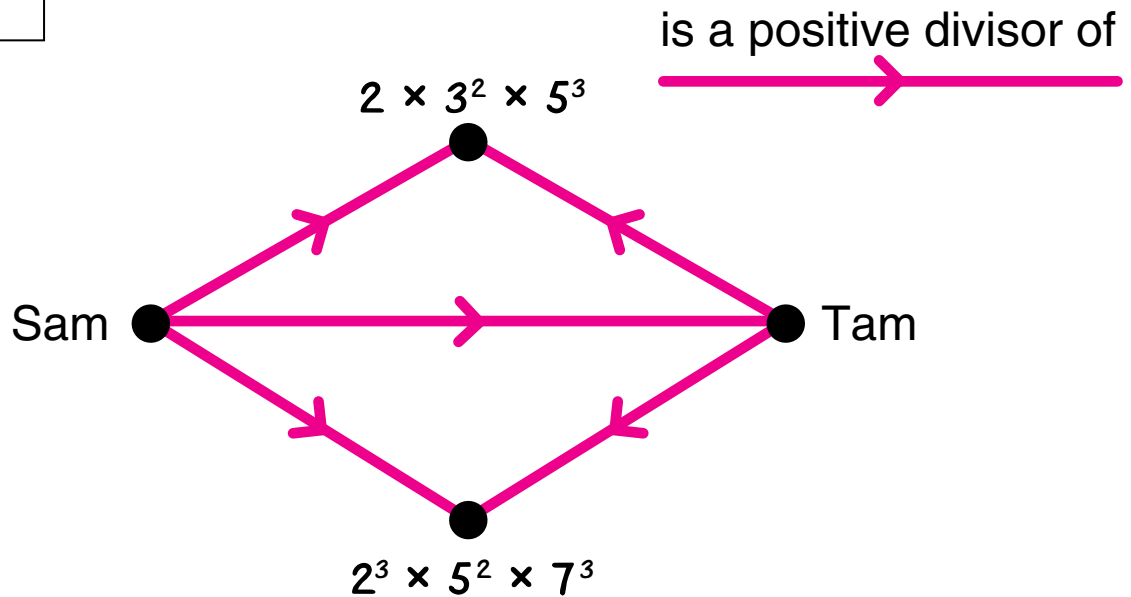
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Check your rule, and then fill in the blanks in the arrow picture.

Sam and Tam are two different secret numbers.

Clue 1



(Sam, Tam) could be \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Hint: There are between 10 and 15 possibilities for (Sam, Tam).

Clue 2

$$\frac{1}{\text{Sam}} + \frac{1}{\text{Tam}} < \frac{1}{4}$$

(Sam, Tam) could be \_\_\_\_\_

Clue 3

$$\text{Sam}^3 > \text{Tam}^2$$

(Sam, Tam) is (\_\_\_\_, \_\_\_\_).