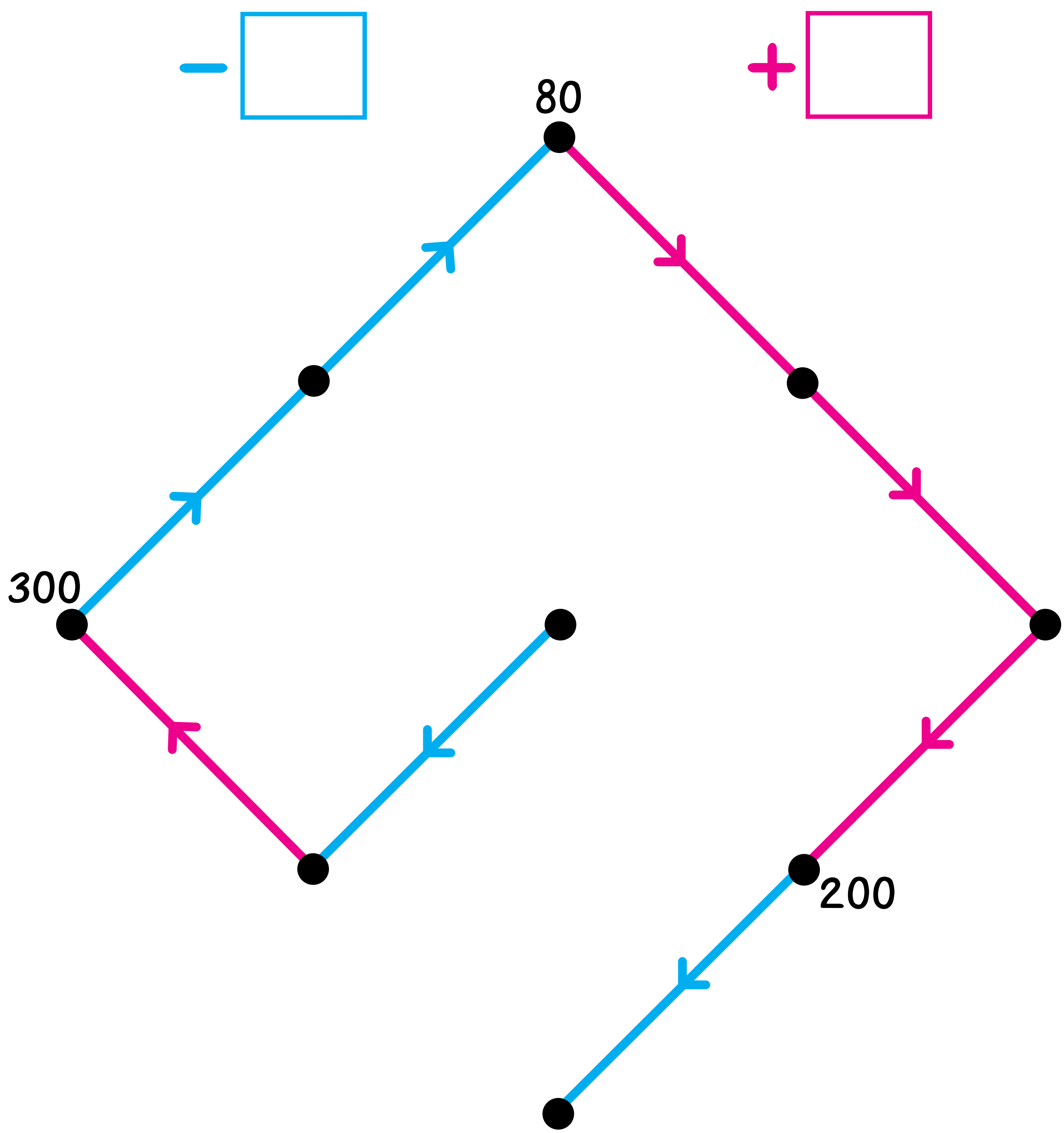
Name ____________________________

Collage of Problems #2

Fill in the boxes for the arrows and label the dots.



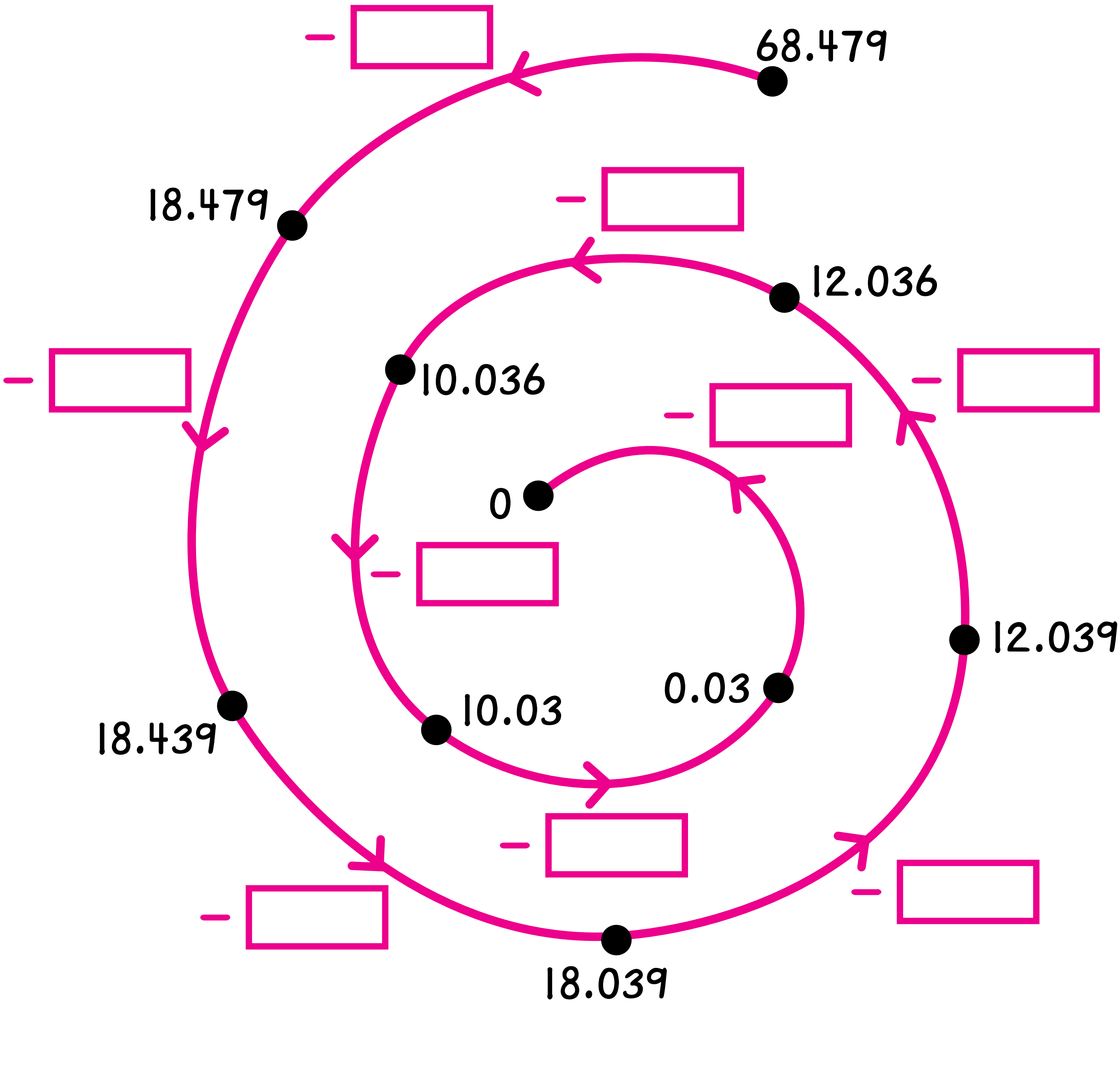
Find all of the places in this table where the entry is $\widehat{2}$.
One is located for you.

—	1	2	3	4	5	6	7	8	9
1									
2									
3					$\widehat{2}$				
4									
5									
6									
7									
8									
9									

Did you find the other six places where the entry is $\widehat{2}$? _______

Wipe-out

Fill in the boxes for the arrows.



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

$$782 + 149 \quad \square \quad 782 + 188$$

$$621 - 17 \quad \square \quad 621 - 84$$

$$567 + 138 + 495 \quad \square \quad 316 + 567 + 138$$

$$71 - 25 \quad \square \quad 73 - 27$$

$$0.82 \quad \square \quad 0.135$$

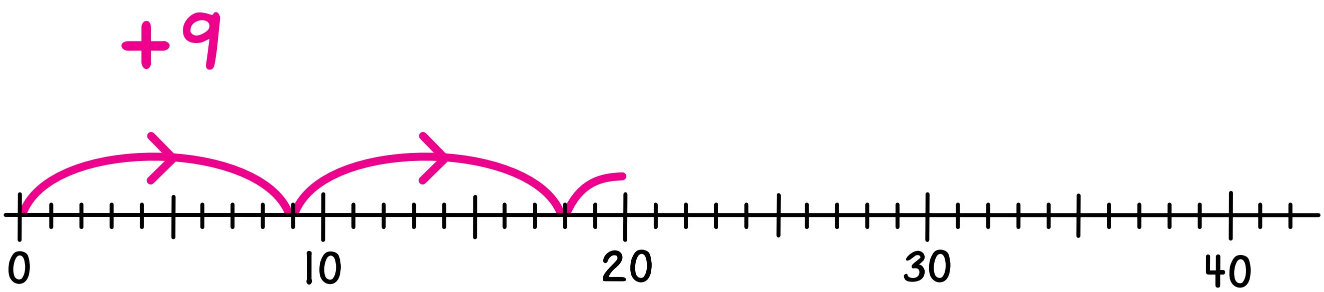
$$0.94 \times 765 \quad \square \quad 765$$

$$\frac{1}{3} \quad \square \quad \frac{1}{8}$$

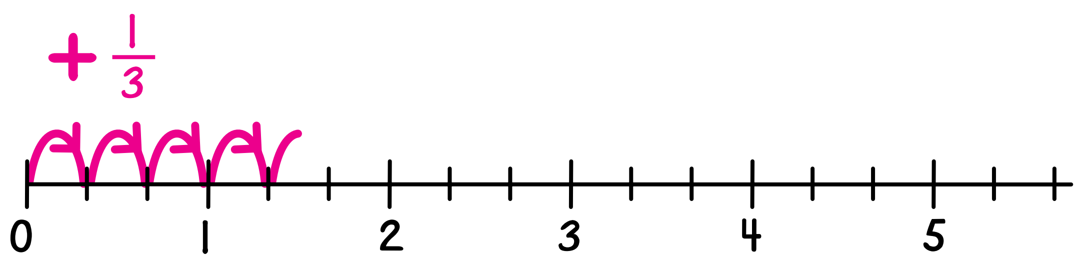
$$\frac{5}{7} \quad \square \quad \frac{2}{7}$$

Draw arrows on each number line to show the solution to each problem.

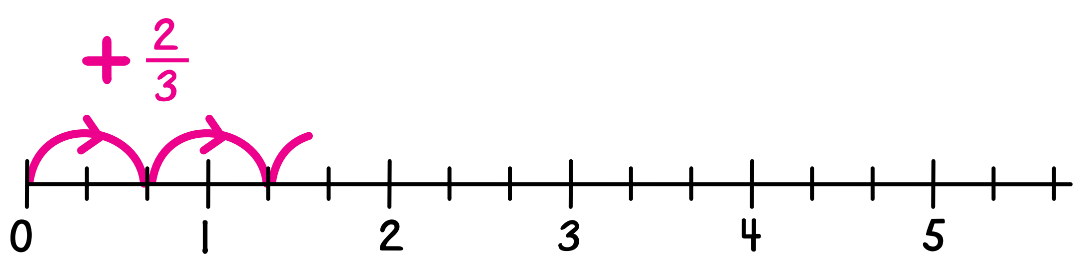
$$36 \div 9 = \underline{\qquad\qquad}$$



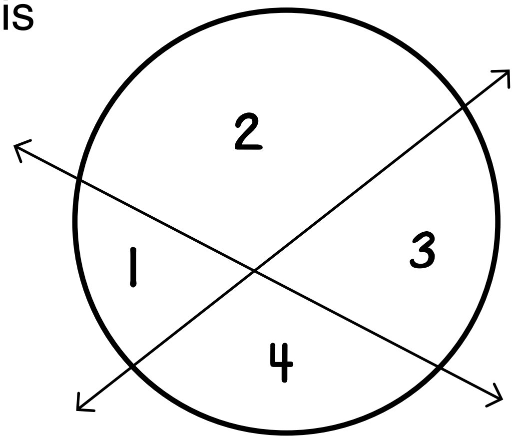
$$4 \div \frac{1}{3} = \underline{\qquad\qquad}$$



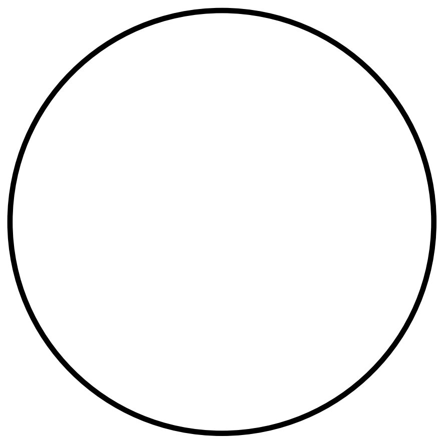
$$5\frac{1}{3} \div \frac{2}{3} = \underline{\qquad\qquad}$$



Using two lines, this circle is divided into four regions.

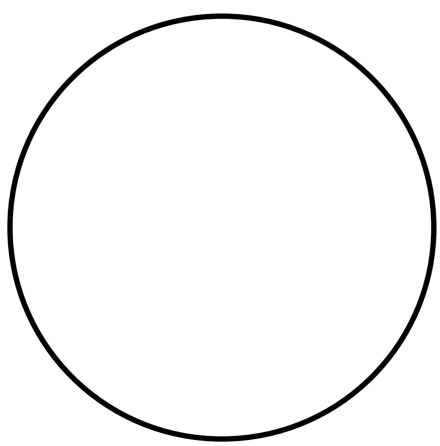


Use three lines to divide this circle into as many regions as you can.



How many regions? ______

Use three lines to divide this circle into as few regions as you can.



How many regions? ______

Show your work in the space provided.

Add.

$4.76 + 2.8$

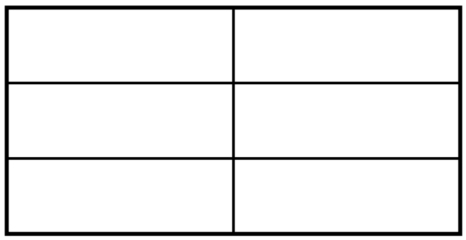
Subtract.

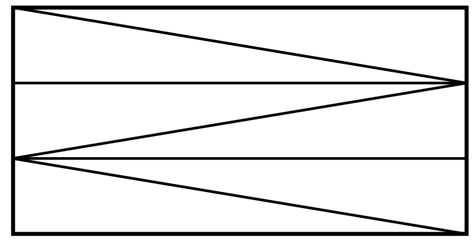
$4.76 - 2.8$

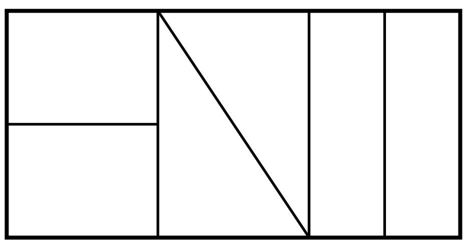
Multiply.

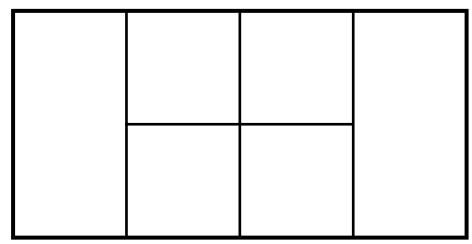
4.76×2.8

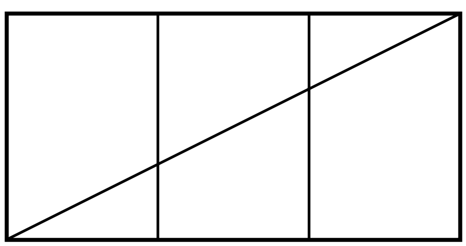
Circle each picture that shows a rectangle divided into sixths.

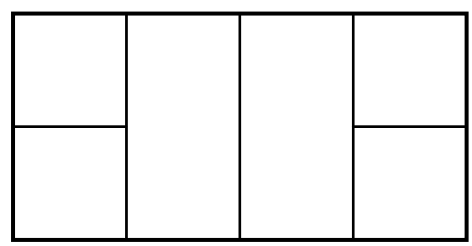


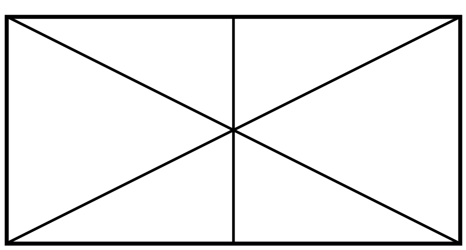


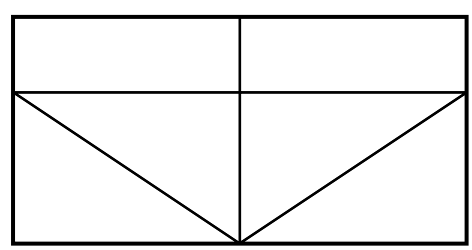


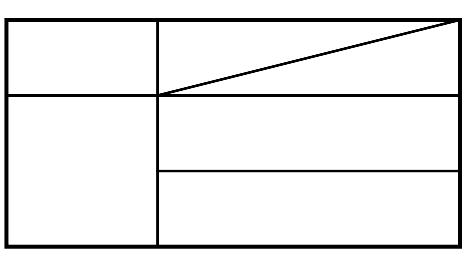


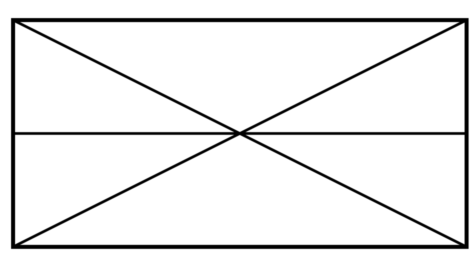












Complete.

10% of 60 = 6

2% of 60 = 1.2

50% of 60 = ____

20% of 60 = ____

25% of 60 = ____

100% of 60 = ____

Use the facts above to solve these problems.

60% of 60 = ____

35% of 60 = ____

120% of 60 = ____

90% of 60 = ____

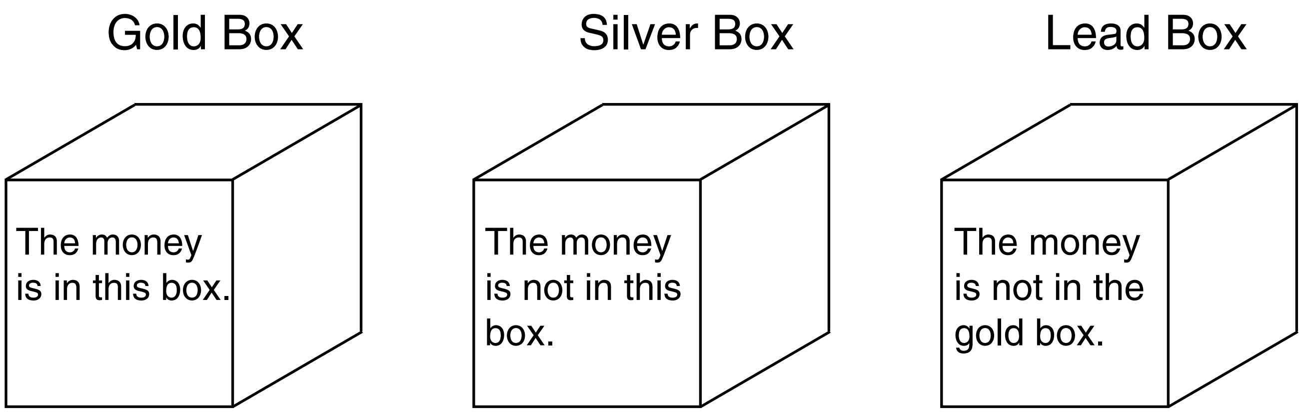
1% of 60 = ____

22% of 60 = ____

11% of 60 = ____

42% of 60 = ____

Majestro the Magician put a $100 bill into one of these boxes. The other two boxes are empty.



Majestro correctly tells you that exactly one of the statements on the boxes is true.

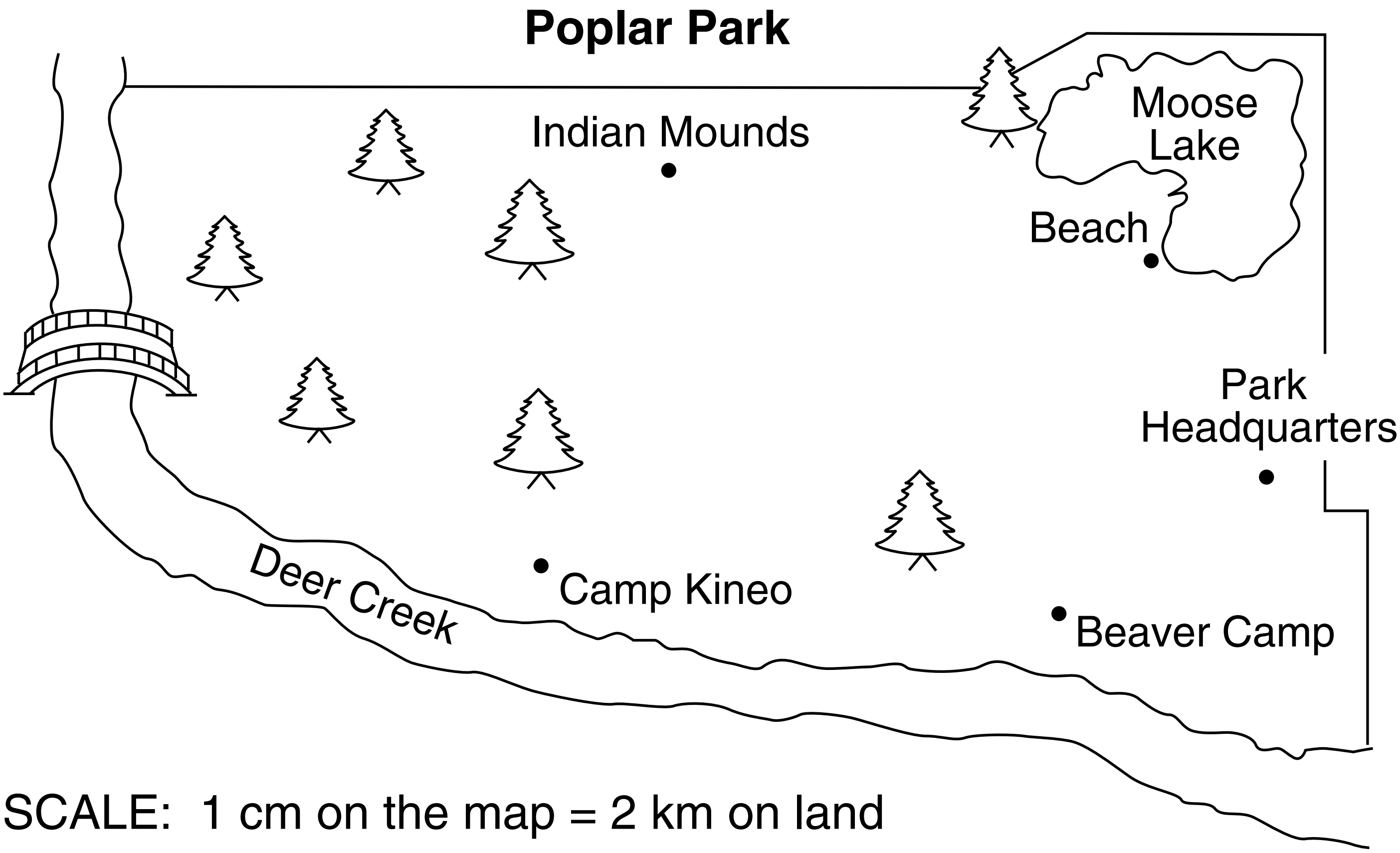
Which box contains the $100 bill? __________

Which box has the true statement written on it? __________

Complete these two division calculations.

$48 \overline{)\,6\,403}$

$21 \overline{)\,14\,831}$



SCALE: 1 cm on the map = 2 km on land

1. One the map, what is the length of a line segment between Camp Kineo and Moose Lake Beach? ________cm
   What is the actual distance between Camp Kineo and Moose Lake Beach? ________km

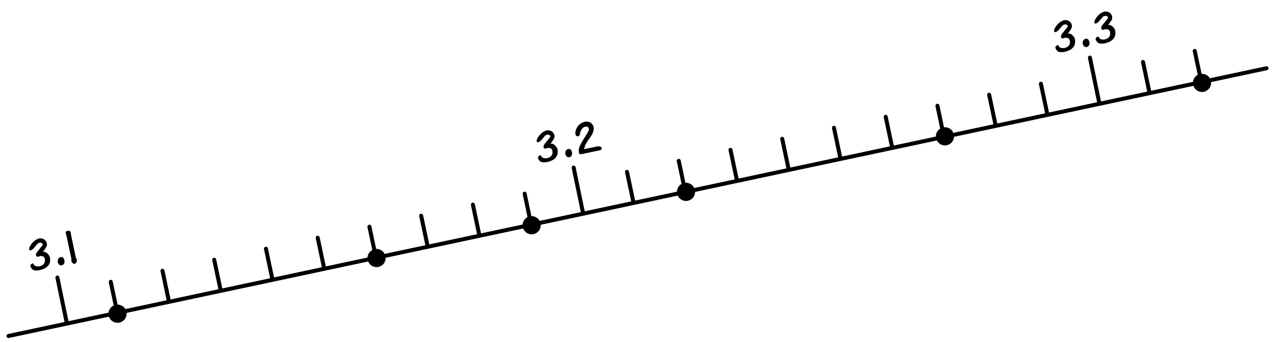
2. If a hiker walks 4 km in one hour, how long should she take to walk from Camp Kineo to Moose Lake Beach? ________
   From Moose Lake Beach to the Indian Mounds? ________

3. Hogback Cave in Poplar Park is 6 km from Camp Kineo and 14 km from Beaver Camp. Find the location of Hogback Cave, draw a dot, and label it.

Lim is a secret number.

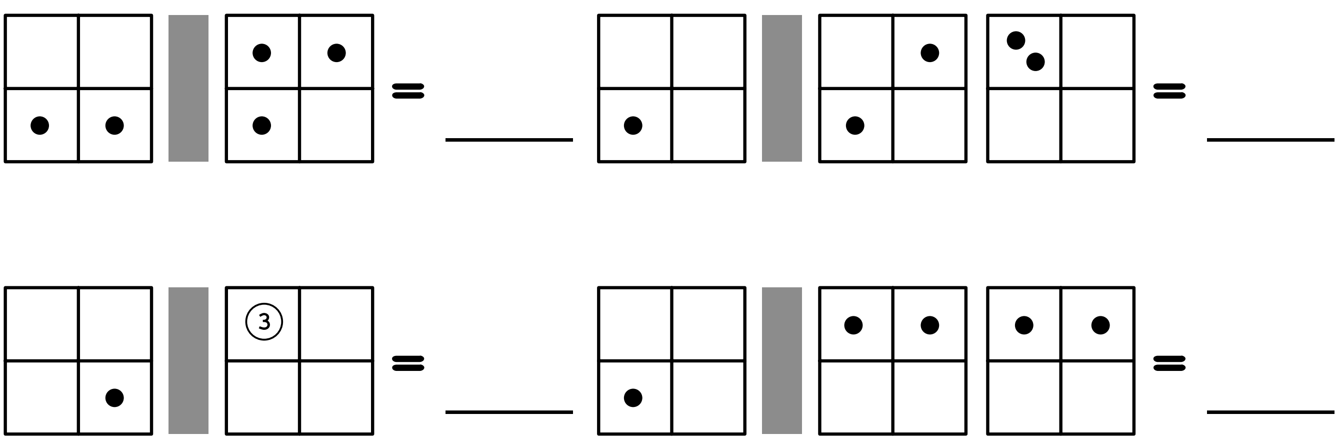
Clue 1

Lim is one of the dots on this number line. Label the dots.



Clue 2

Lim is one of these numbers.



Who is Lim? ___________

Timely Questions

Show your work in the space provided.

1. Lloyd takes a 5 hour and 40 minute bus ride from Chicago to St. Louis to see a football game. If he leaves Chicago at 8:30 AM, what time will he arrive in St. Louis? _________ (Don't forget to indicate AM or PM.)

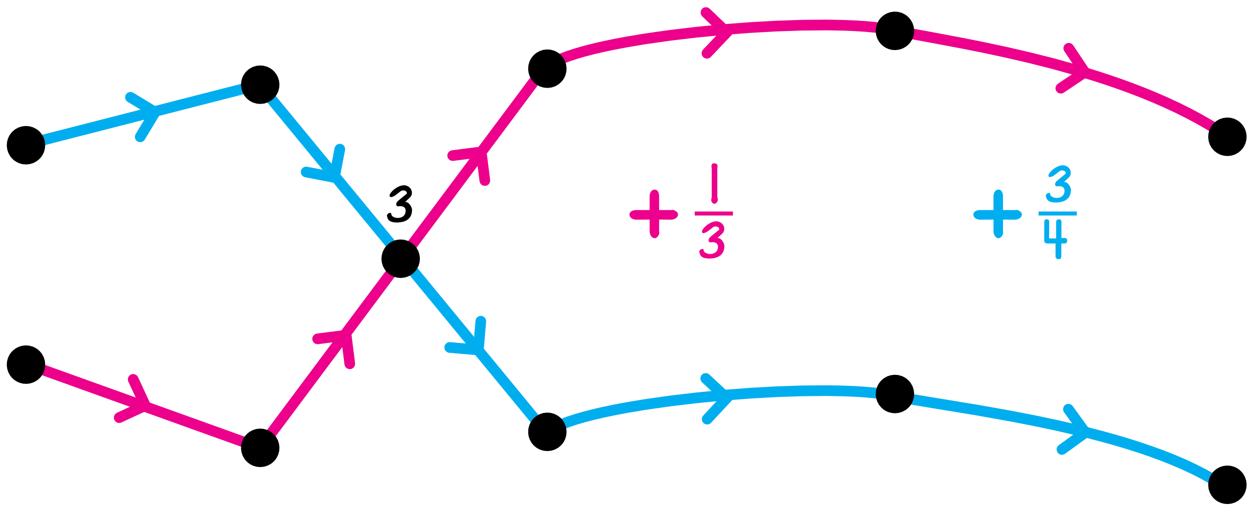
2. Your heart beats about 80 times per minute. About how many times does it beat in one day? ________
one year? ________

Draw a quadrilateral (four-sided polygon) with at least one right angle and at least one obtuse angle.

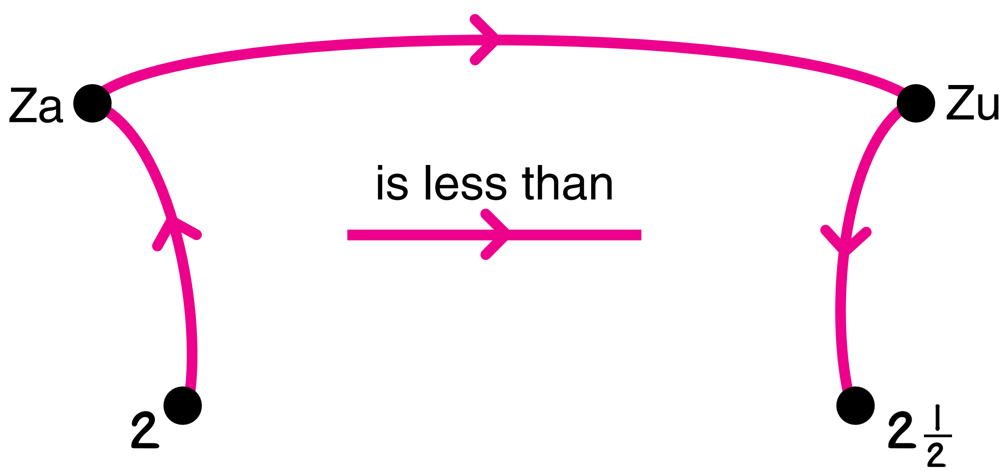
Za and Zu are secret numbers.

Clue 1

Za and Zu are in this arrow picture. Label the dots.



Clue 2



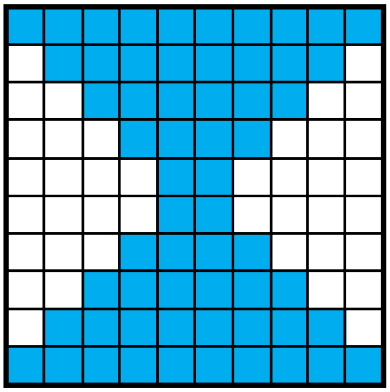
Who is Za? ___________ Who is Zu? ___________

A Pair of Problems

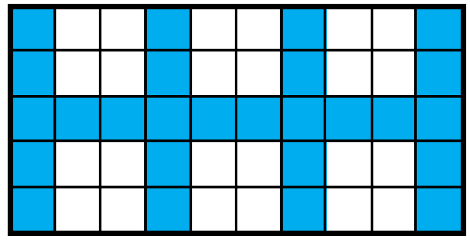
1. There are 120 sixth graders in Jackson Middle School. If there are 12 more girls than boys in the sixth grade, how many girls are there? ________ Boys? ________

2. On a summer day in Tuscaloosa, there are 9 hours more of daylight than of darkness. On that day, how many hours of daylight are there? ________ Of darkness? ________

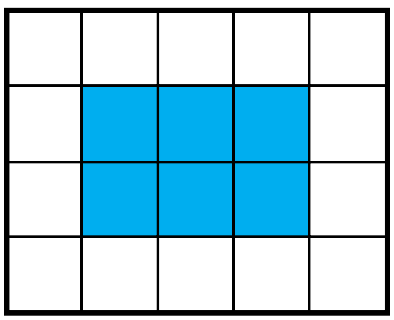
What percent of each shape is colored blue?



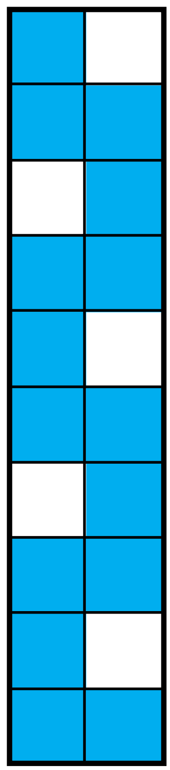
______ %



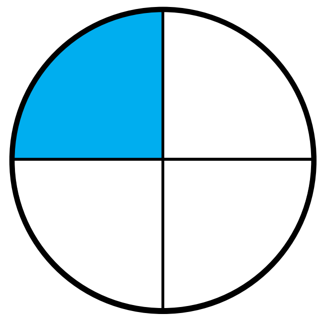
______ %



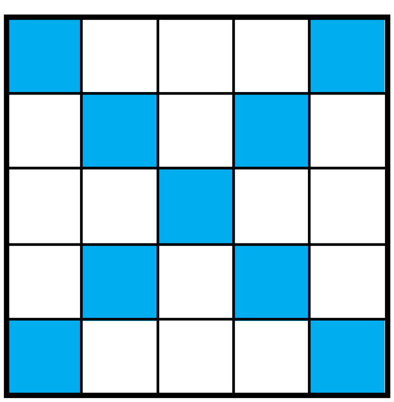
______ %



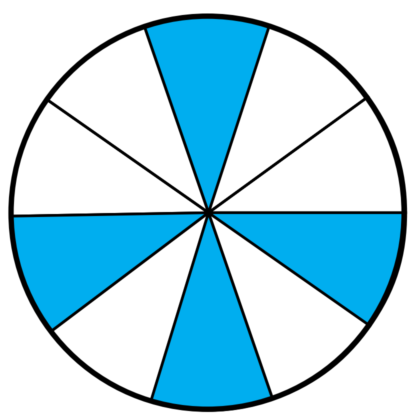
______ %



______ %

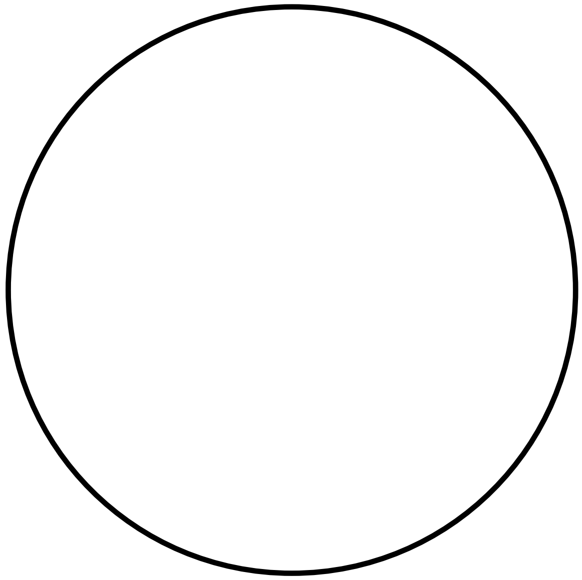


______ %



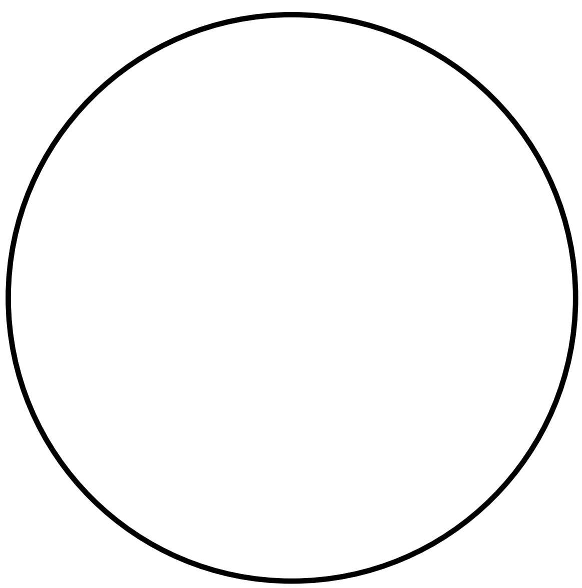
______ %

Use four lines to divide this circle into as many regions as you can.



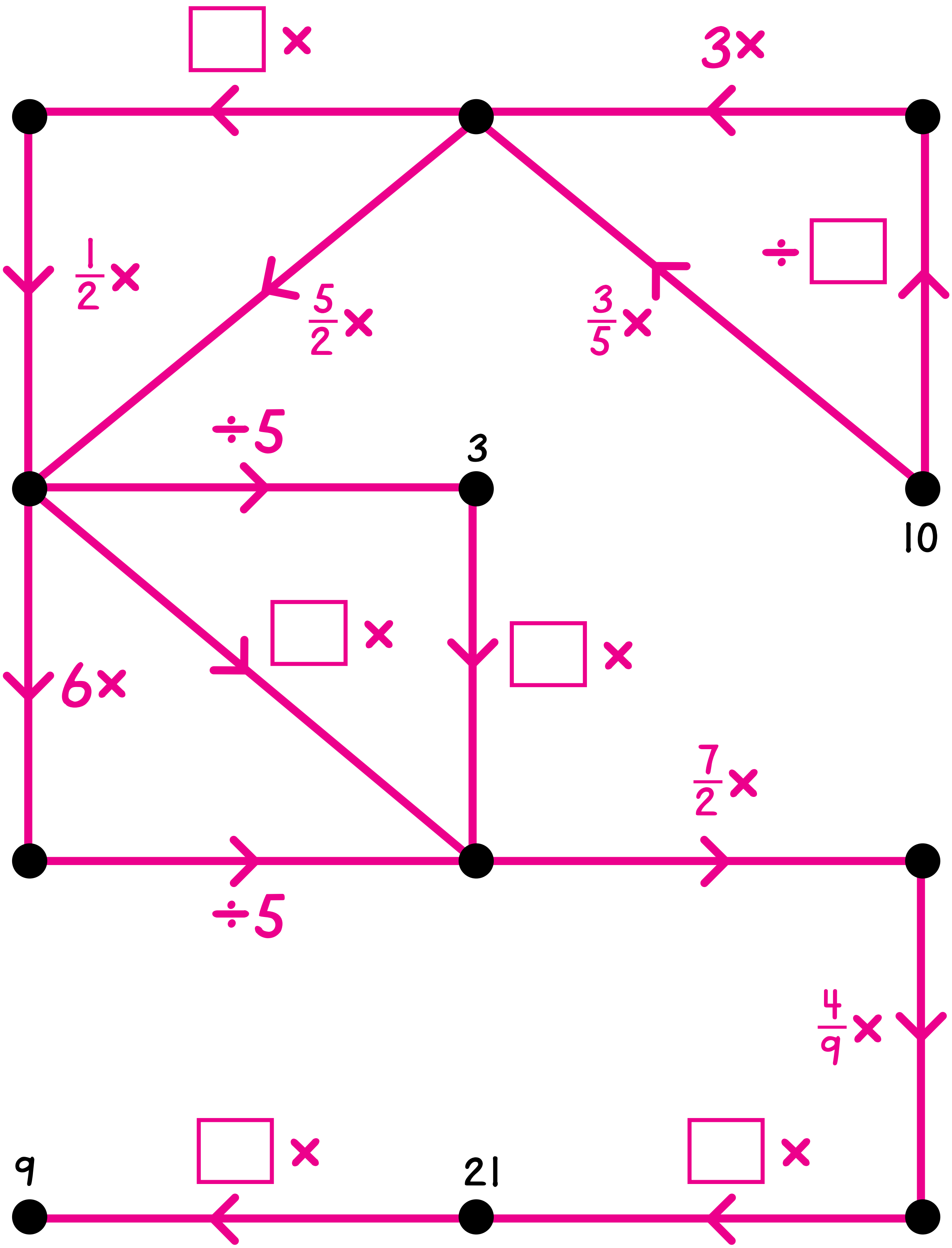
How many regions? ______

Use four lines to divide this circle into as few regions as you can.



How many regions? ______

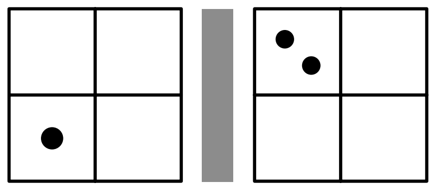
Label the dots and fill in the boxes for the arrows.



Zim is a secret number.

Clue 1

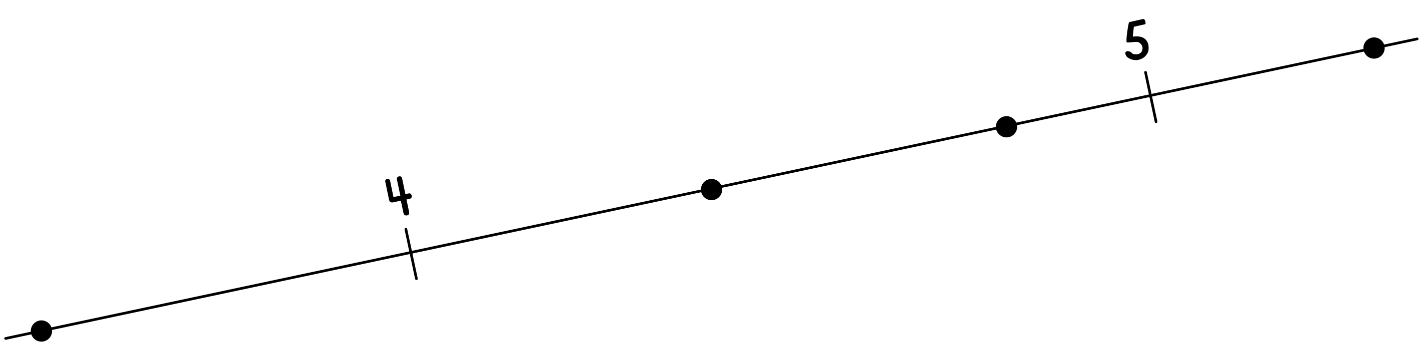
Zim can be put on this Minicomputer by adding one regular checker.



Zim could be _____, _____, _____, _____, _____, _____, _____, or _____.

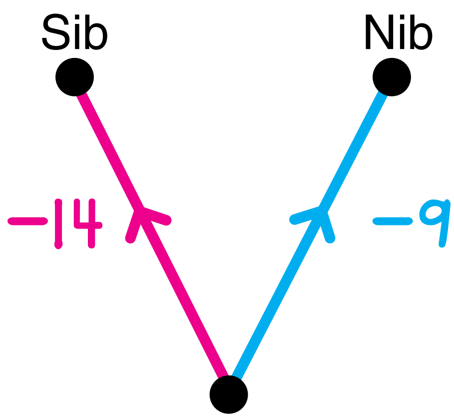
Clue 2

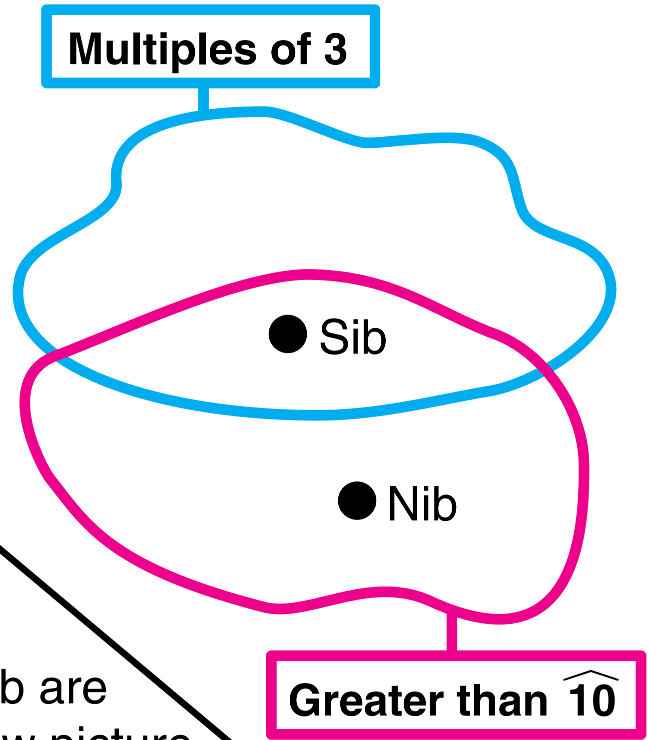
Zim is one of the dots on this number line. Label the dots. (Use a ruler.)



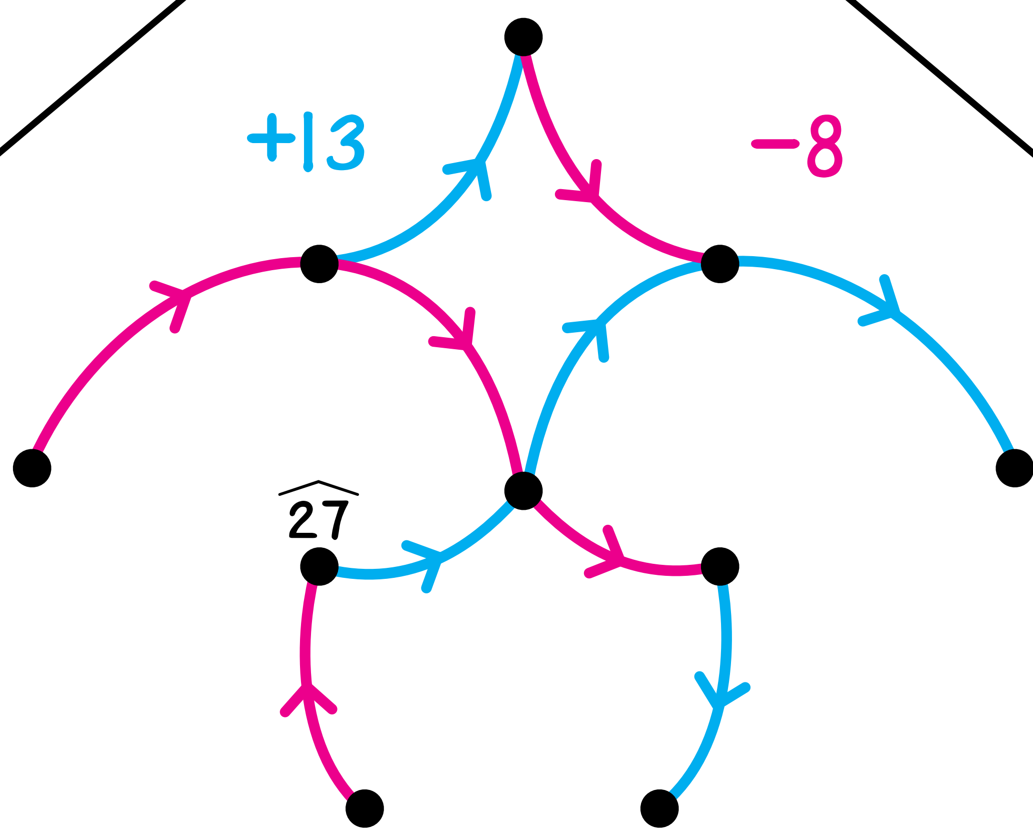
Who is Zim? ___________

Sib and Nib are secret numbers.





Sib and Nib are
in this arrow picture.



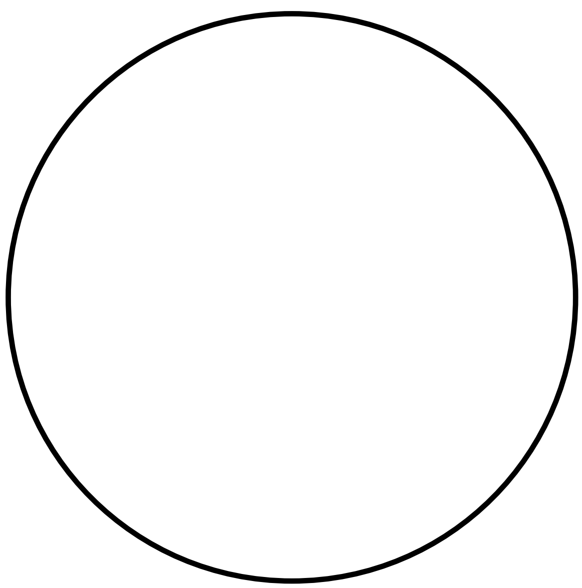
Who is Sib? ____________ Who is Nib? ____________

Ask your teacher to check your answers on pages 7 and 20.
Use correct answers to fill in the boxes in this table:

Number of line segments	1	2	3	4	5	6
Maximum number of regions	2	4	☐	☐		

Do you see a pattern? ______ Predict the largest number of regions into which you can divide a circle using five line segments. __________

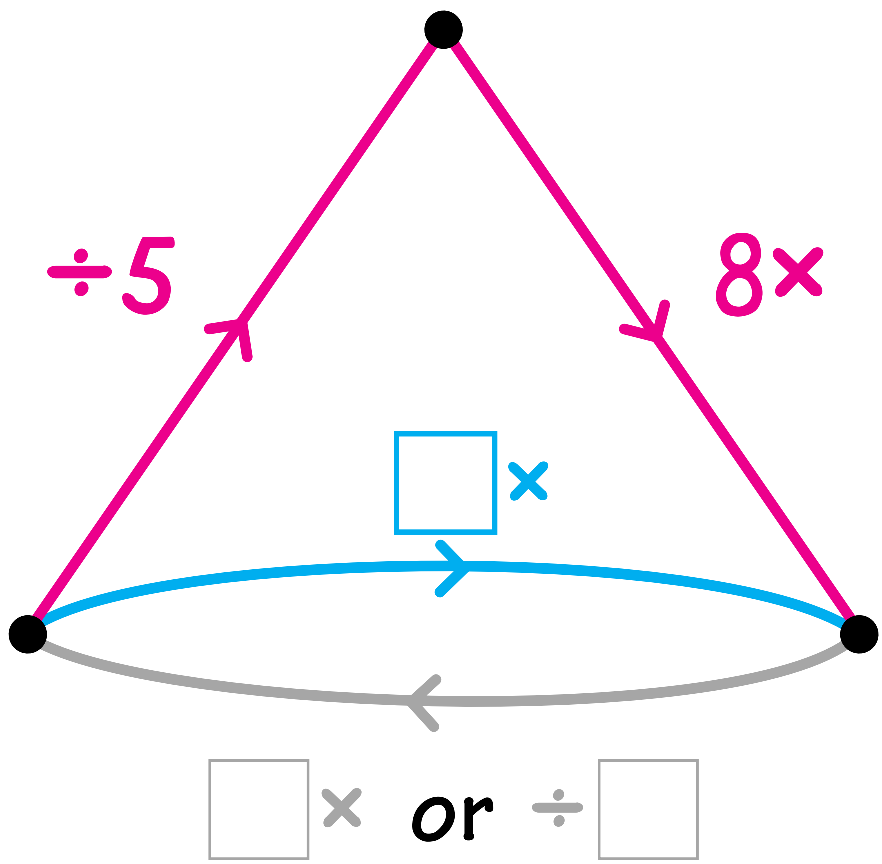
Check your prediction by using five line segments to divide this circle into as many regions as you can.



How many regions? _____ Was your prediction correct? ______

Using the same pattern, predict the largest number of regions into which you could divide a circle using six line segments. ______

Fill in the boxes for the arrows.



Complete.

$40 \div \frac{8}{5} =$ ______

$40 \div \frac{5}{8} =$ ______

$56 \div \frac{8}{5} =$ ______

$100 \div \frac{5}{8} =$ ______

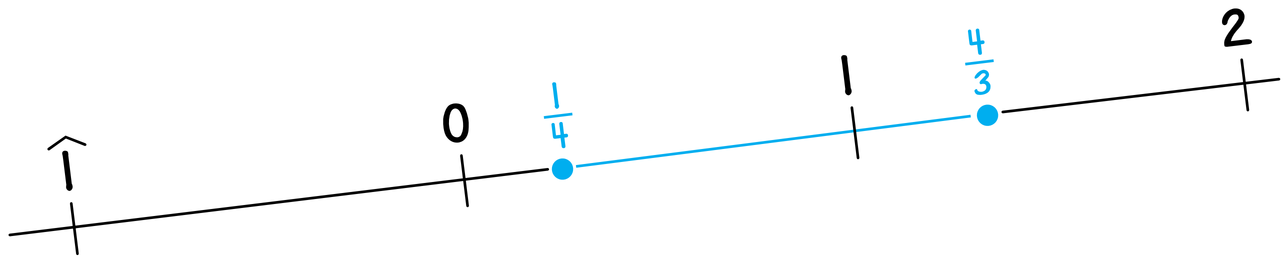
$\frac{5}{6} \div \frac{8}{5} =$ ______

$\frac{5}{6} \div \frac{5}{8} =$ ______

Build an arrow road from 1.3 to 8.25. Each arrow must be for **+**, **−**, **×**, or **÷** a one-digit whole number. Use at most four arrows.

1.3

8.25

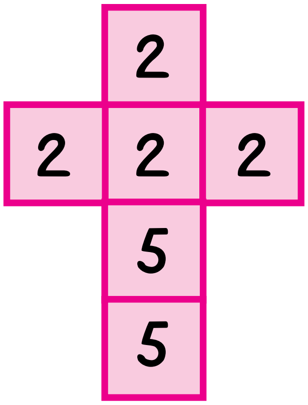


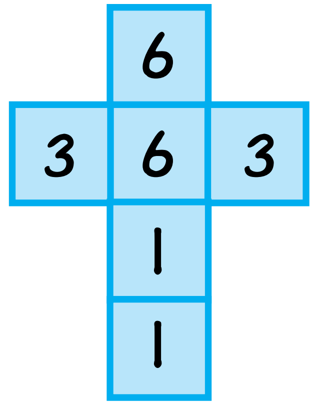
Complete the tables and circle the entries that belong to the blue segment.

$+$	$\frac{1}{2}$	$\frac{3}{4}$
$\frac{3}{4}$		
$\frac{4}{5}$		
$\frac{2}{5}$		

$-$	$\frac{1}{2}$	$\frac{3}{4}$
$\frac{3}{4}$		
$\frac{4}{5}$		
$\frac{2}{5}$		

These are the maps of two number cubes.





Roger and Beth play a game with these two cubes; higher number wins. Roger rolls the red cube and Beth rolls the blue cube.

Use this square to calculate the probability that Roger rolls the higher number.

Roger wins

Beth wins

What is Roger's probability of winning? _________

Who is favored in this game, Roger or Beth? _________

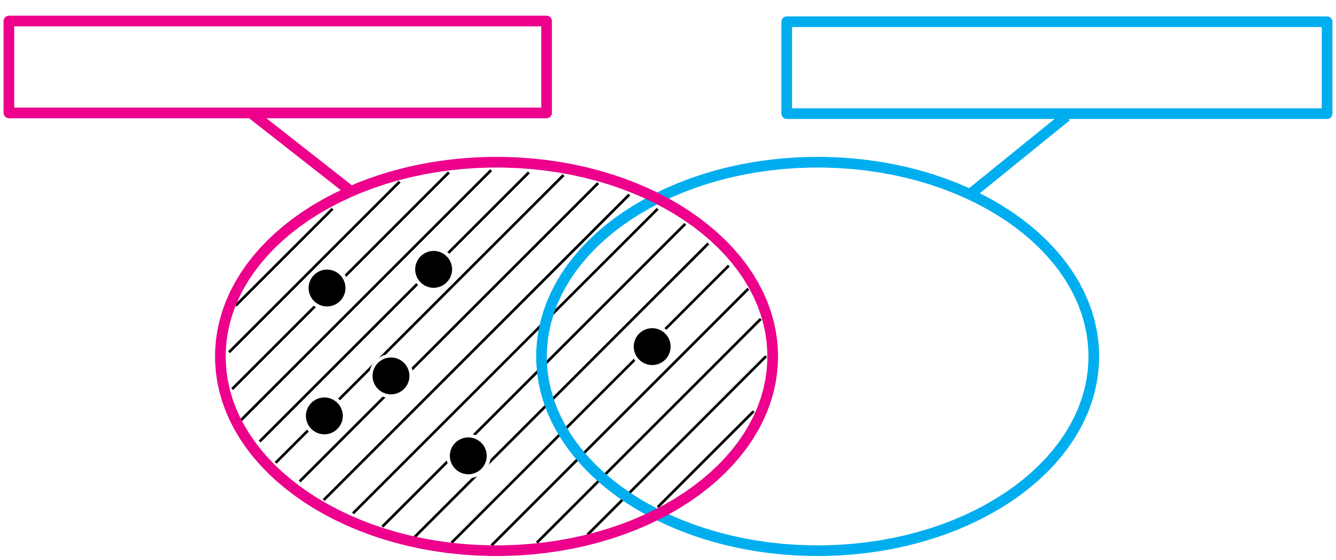
The red label is one of these:

Multiples of 3
Multiples of 4
Multiples of 5
Odd numbers
Positive prime numbers
Positive divisors of 12
Positive divisors of 18
Positive divisors of 20
Positive divisors of 24
Positive divisors of 27

The blue label is one of these:

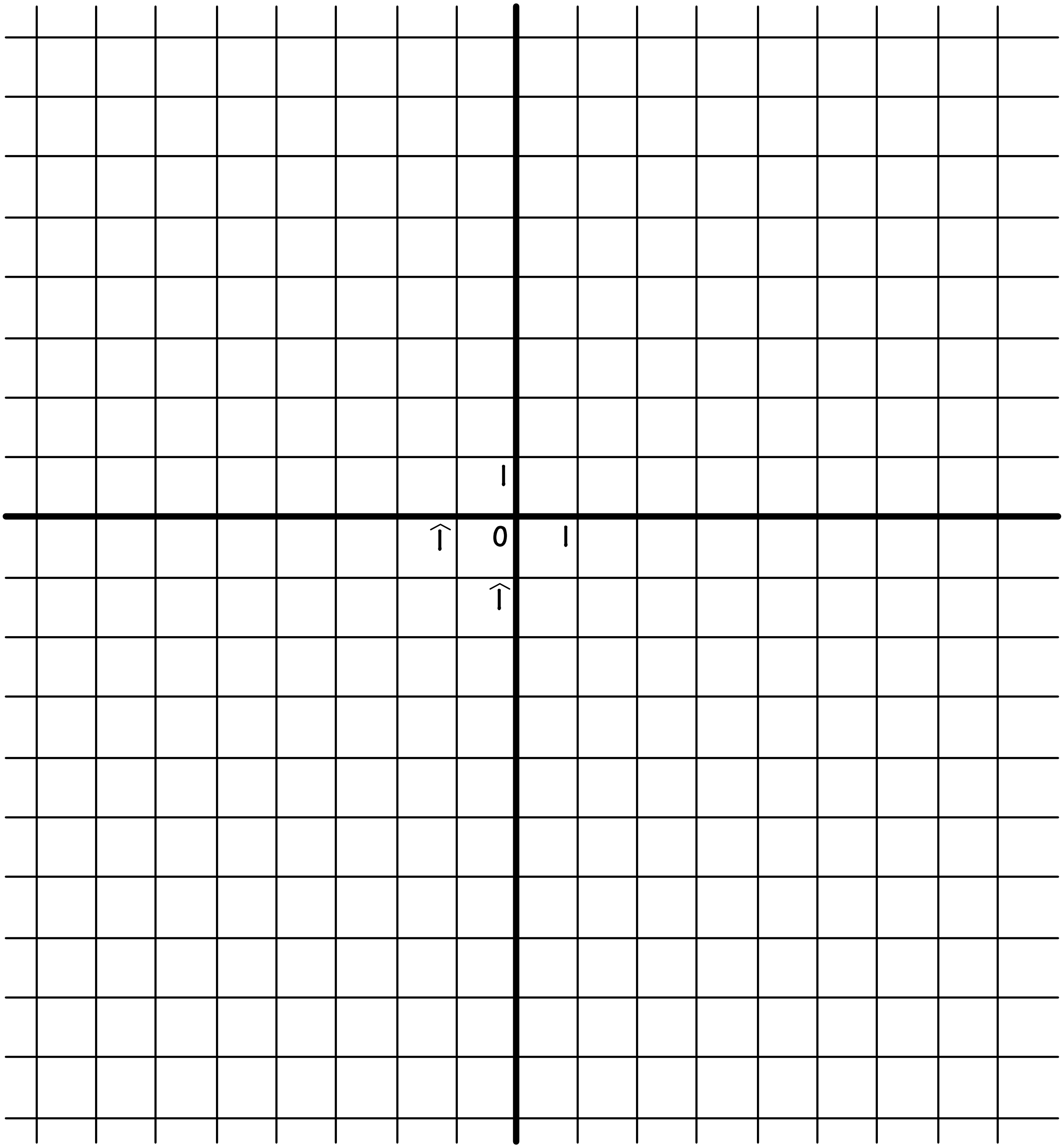
Multiples of 3
Multiples of 4
Multiples of 5
Odd numbers
Positive prime numbers
Positive divisors of 12
Positive divisors of 18
Positive divisors of 20
Positive divisors of 24
Positive divisors of 27

Label the strings.



Lin + Lon < $\widehat{3}$

Shade a region on the grid to indicate all pairs that (Lin, Lon) could be.



It is impossible to make two of these shapes (without dents).

A: A triangle with at least two right angles.

B: A five-sided shape with exactly one right angle and at least two acute angles.

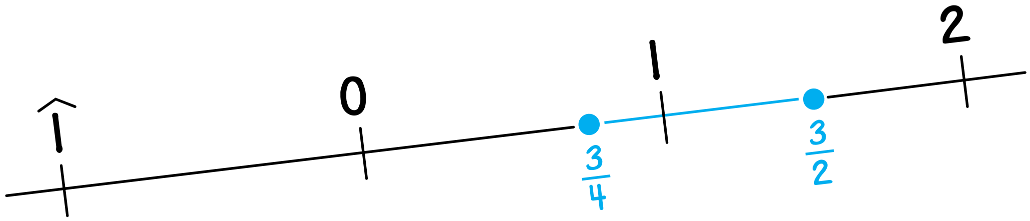
C: A five-sided shape with at least four acute angles.

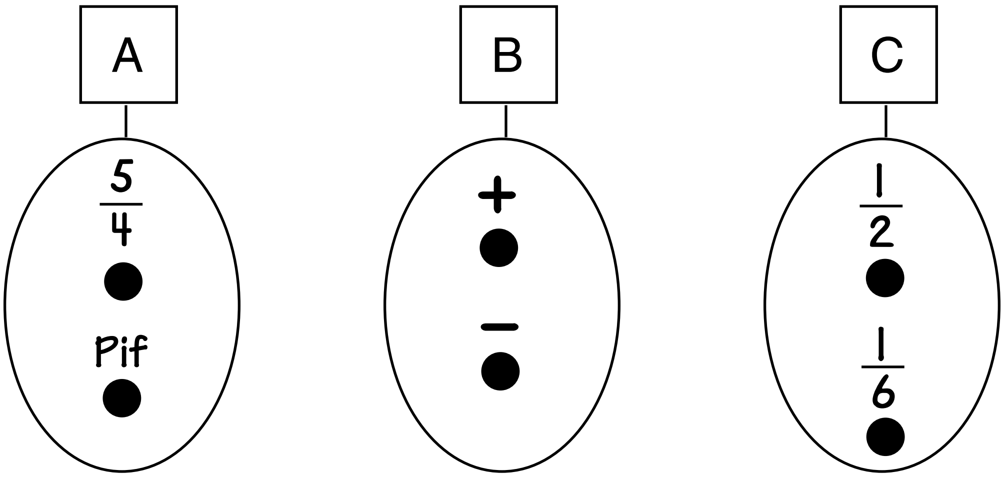
D: A five-sided shape with five obtuse angles.

Circle the letters of the two shapes that are impossible to make.

A B C D

Draw the other two shapes.





One symbol is chosen at random from each string to form the name of a number, for example, $\frac{5}{4} - \frac{1}{6}$. Choose Pif so that the probability of the number being in the blue segment is exactly $\frac{1}{2}$.

You may use the tables below to help you find who Pif could be. There are many possible choices for Pif.

+	$\frac{1}{2}$	$\frac{1}{6}$
$\frac{5}{4}$		
Pif		

−	$\frac{1}{2}$	$\frac{1}{6}$
$\frac{5}{4}$		
Pif		

Pif could be _______________.