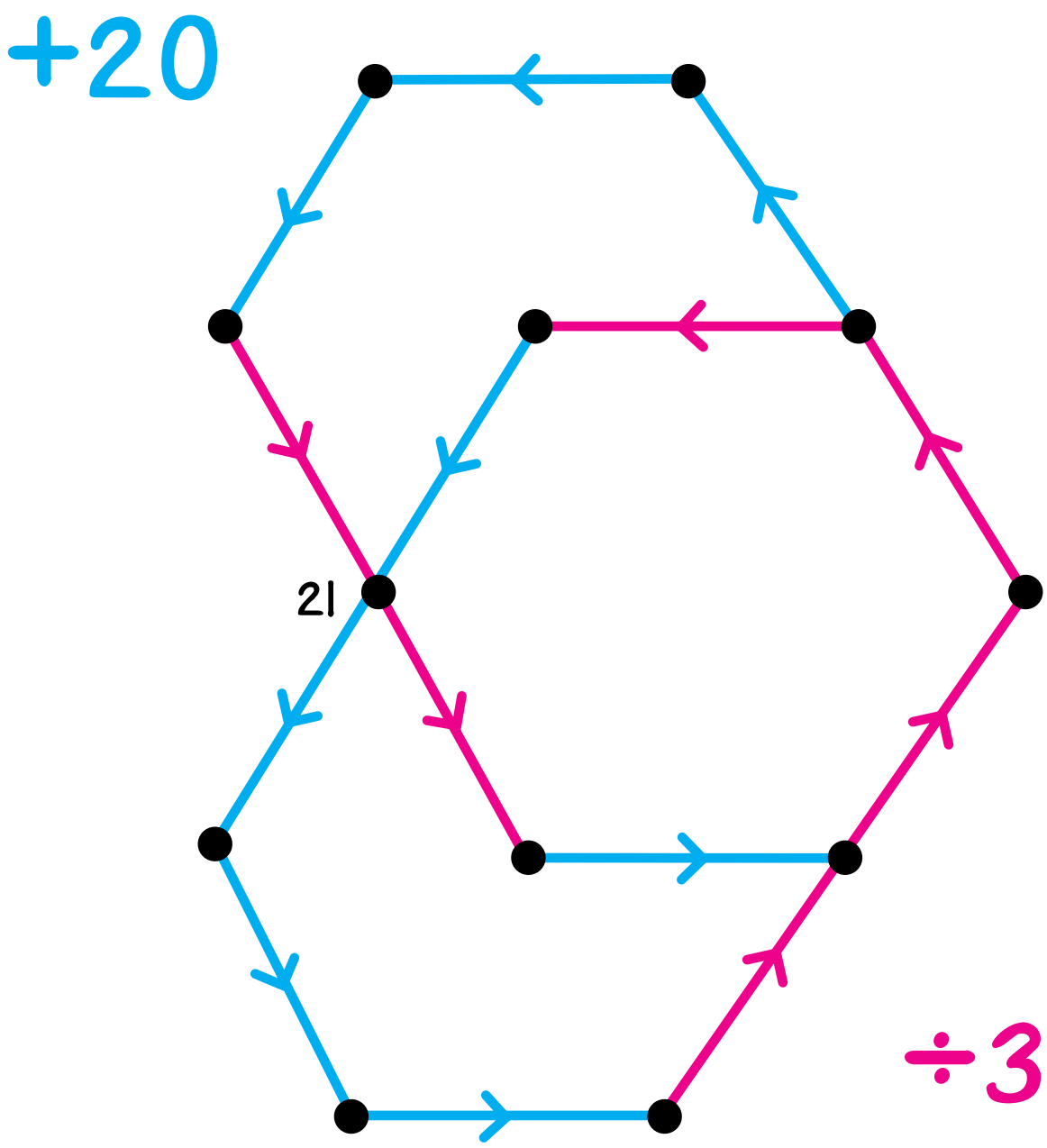
Variety of Problems #5

Label the dots.

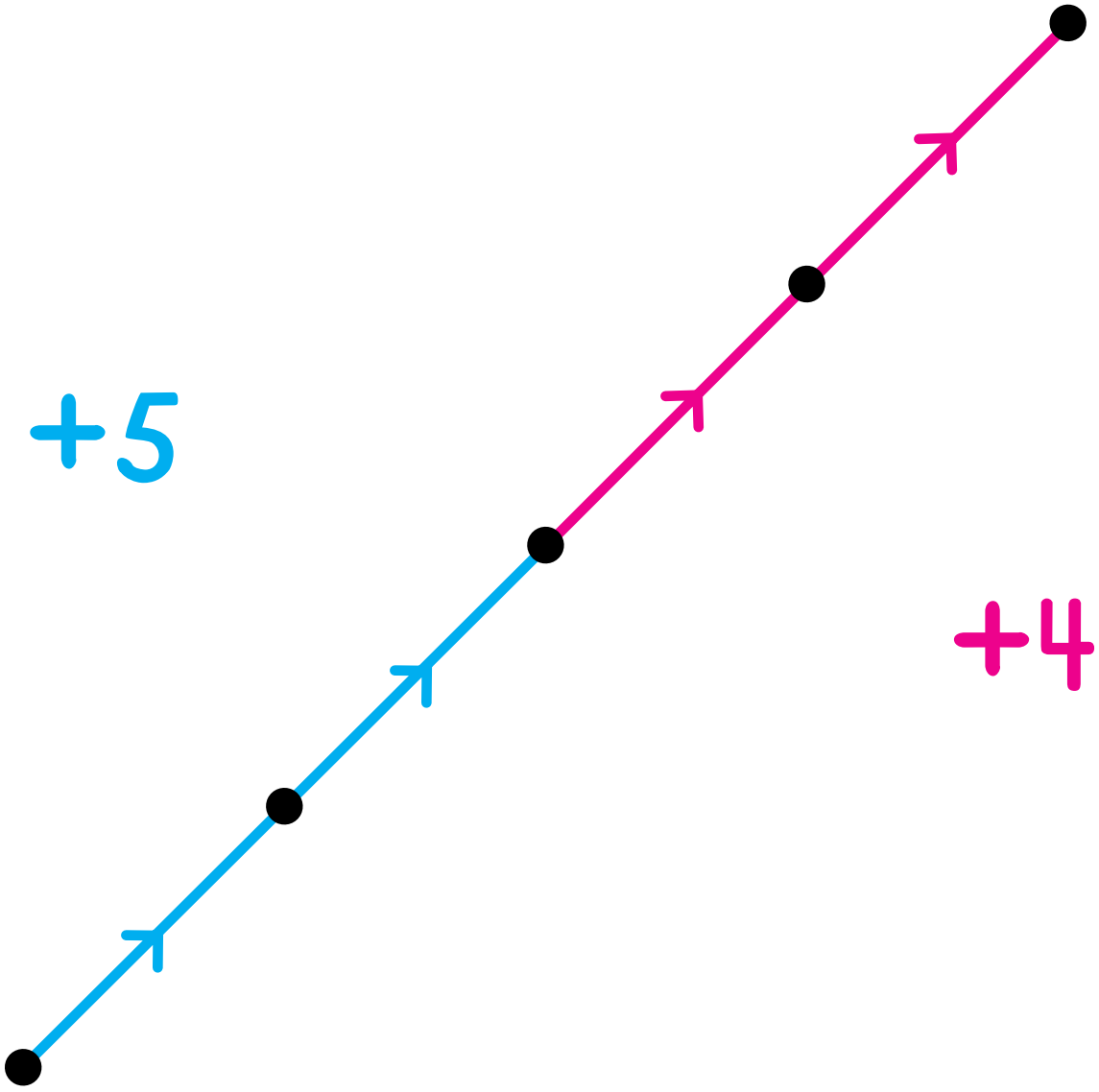


All of the positive divisors of 27 are in this picture.
Circle their dots.

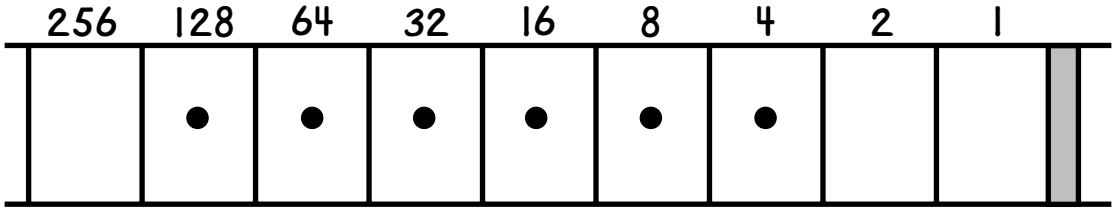
Flip = | | ⑦ | = _____

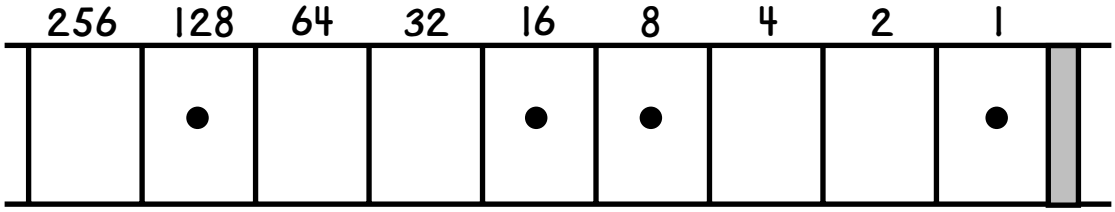
Flop = | | ⑨ | = _____

Flip and Flop are in this arrow picture.
Circle their dots. Label all of the dots.

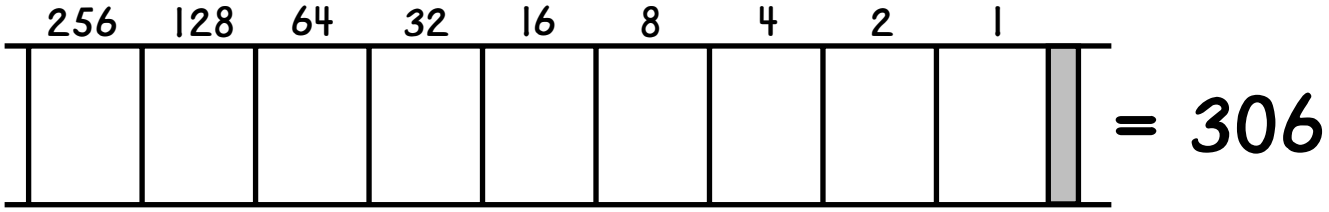


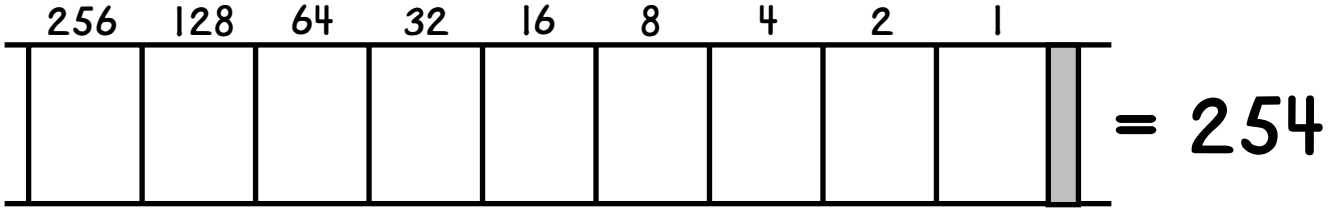
What number is on the binary abacus?



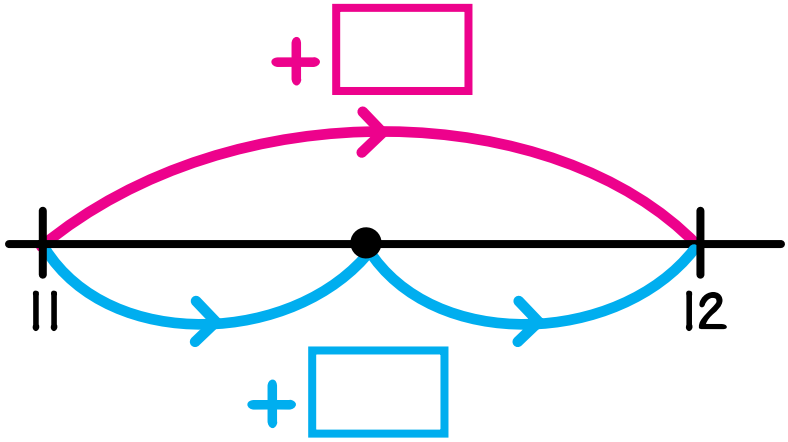


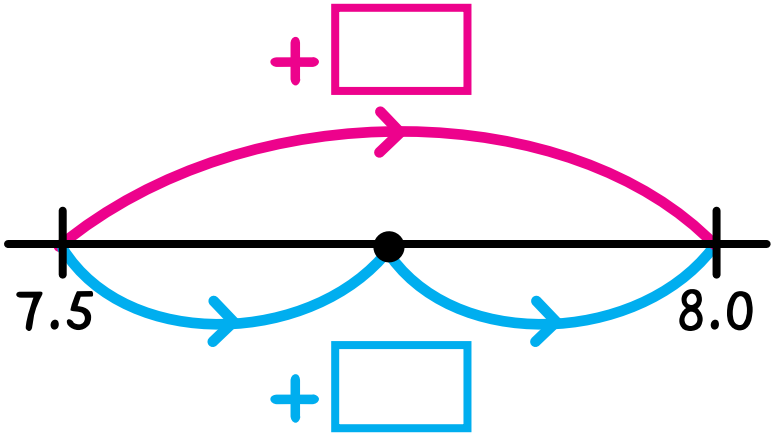
Put these numbers on the binary abacus. Use at most one checker on a board.

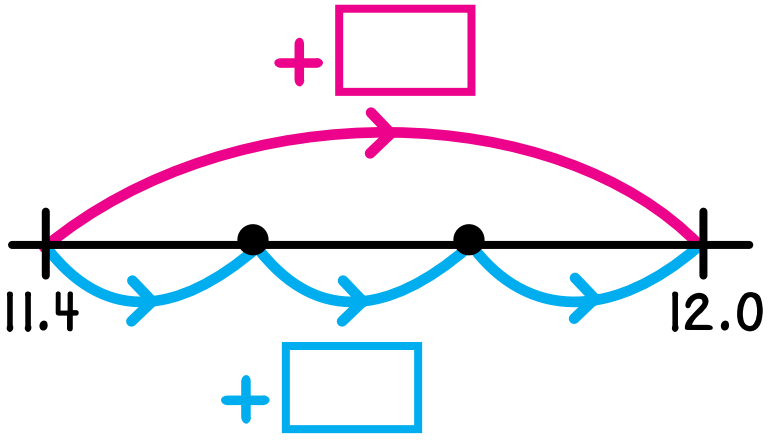




Fill in the boxes for the arrows and then label the dots.



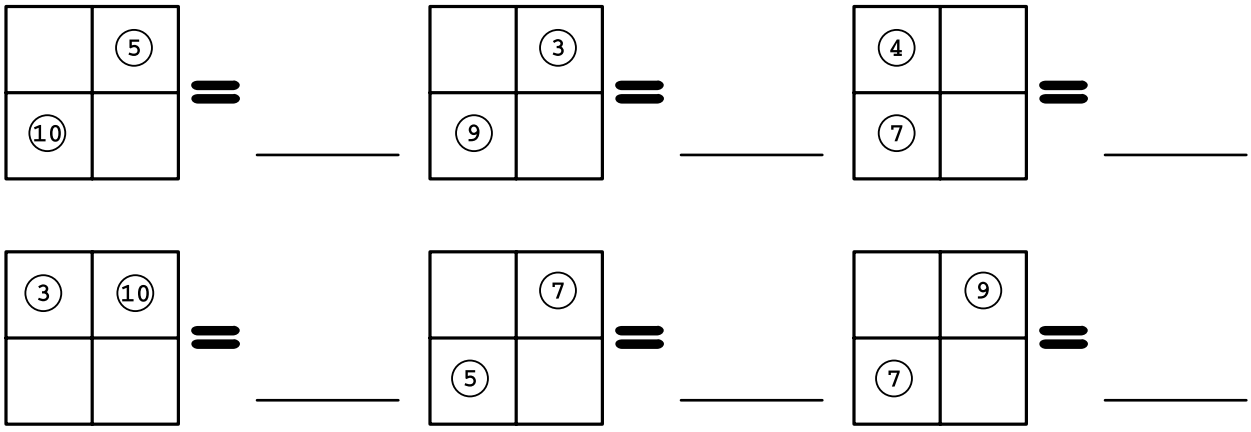




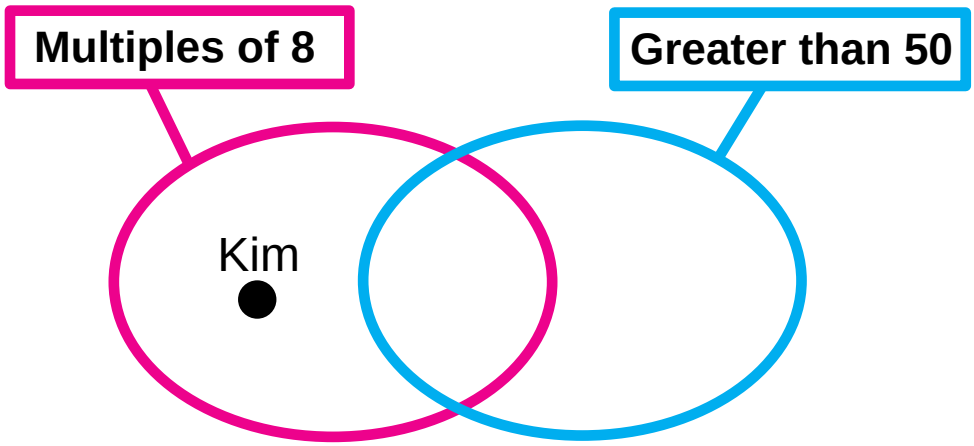
Kim is a secret number.

Clue 1

Kim is one of these numbers.

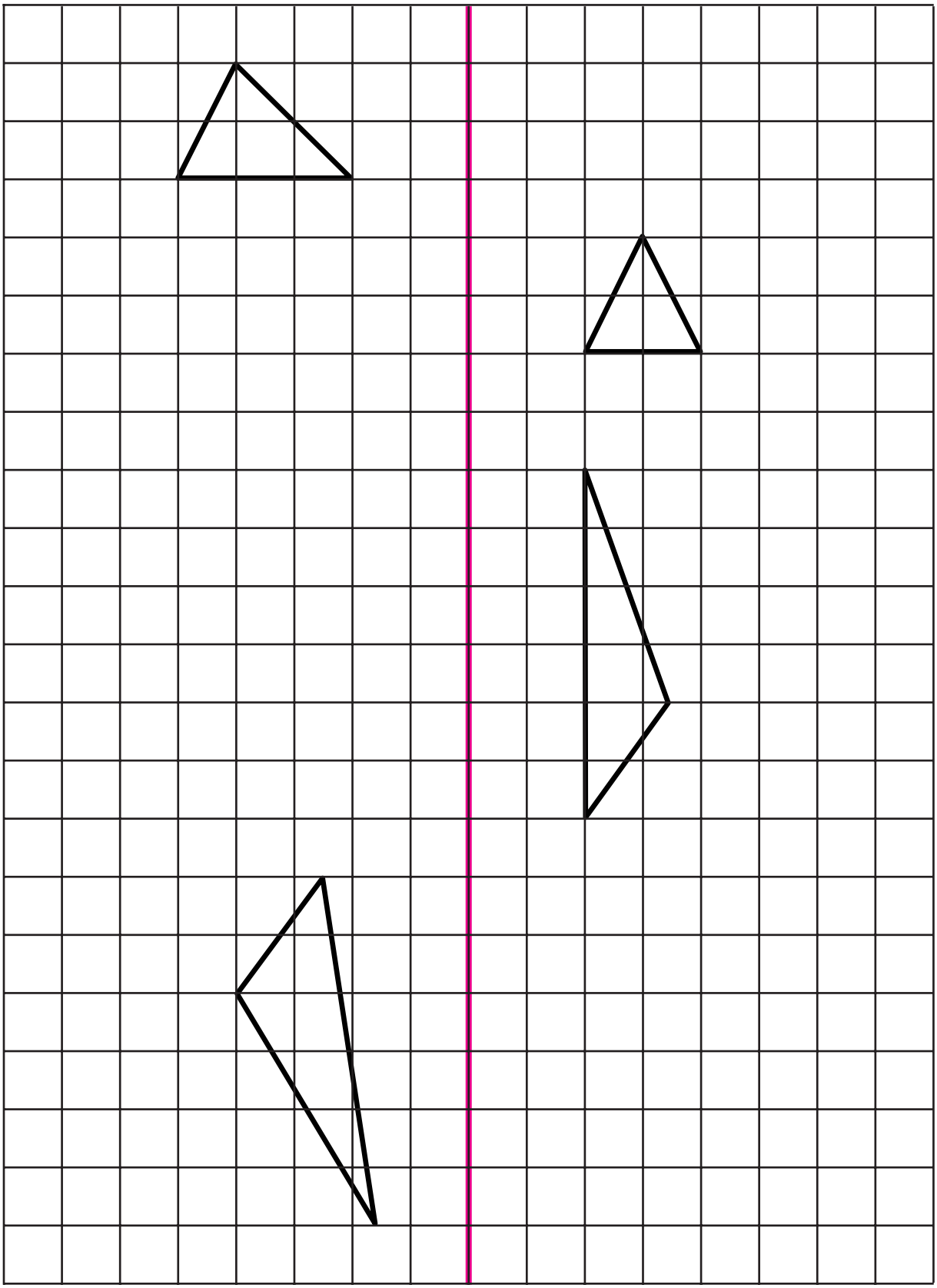


Clue 2



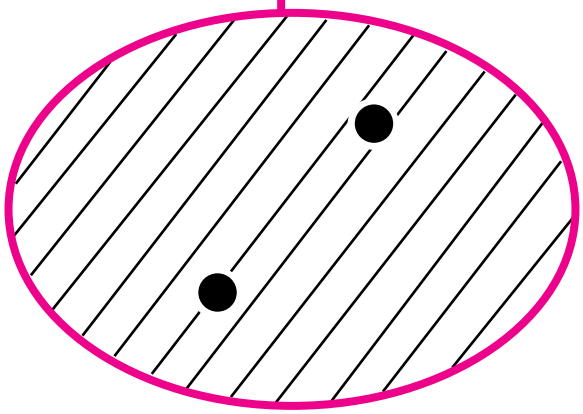
Who is Kim? _____

Draw the reflection of each triangle about the red line.

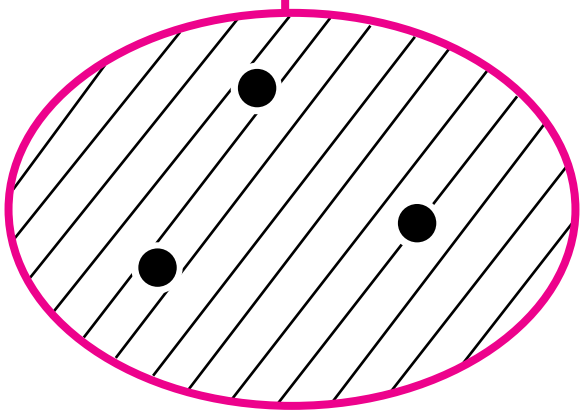


Fill in the blanks and label the dots. Many solutions are possible.

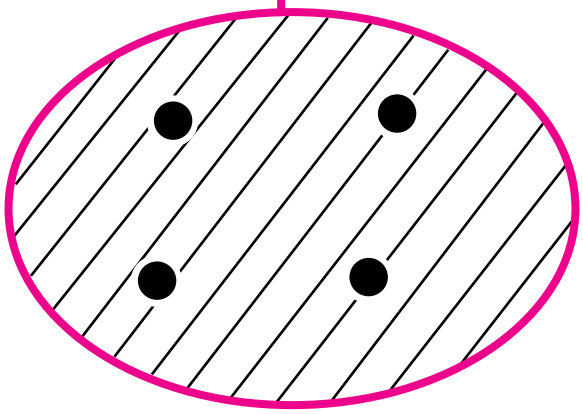
Positive divisors of _____



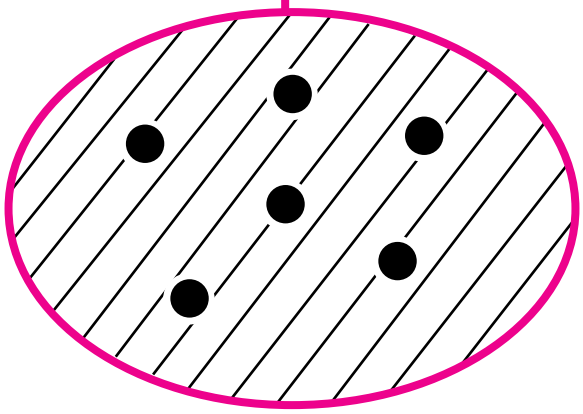
Positive divisors of _____



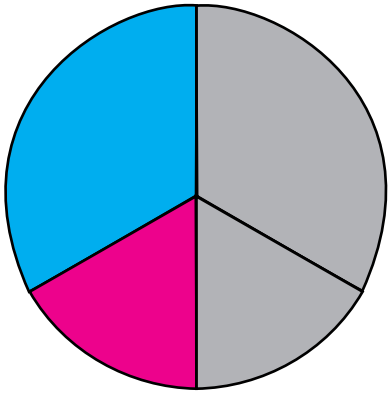
Positive divisors of _____



Positive divisors of _____



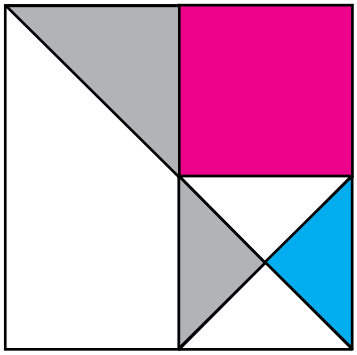
What fractional part of each shape is colored each color?



Red _____

Blue _____

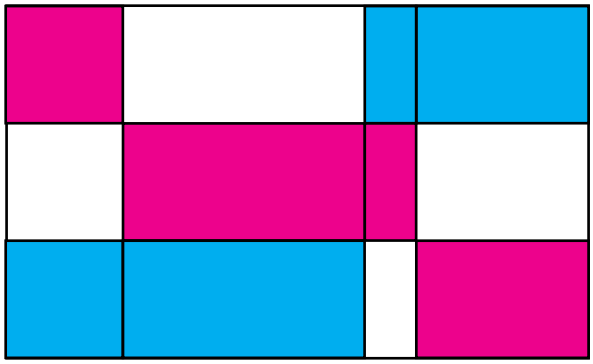
Gray _____



Red _____

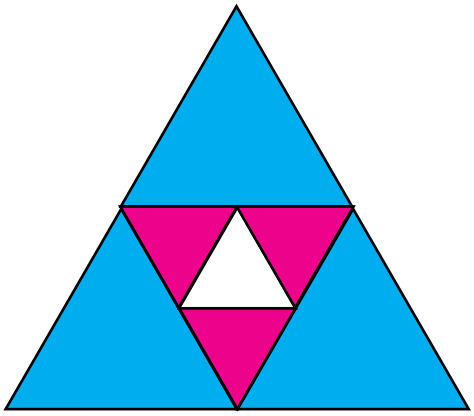
Blue _____

Gray _____



Red _____

Blue _____



Red _____

Blue _____

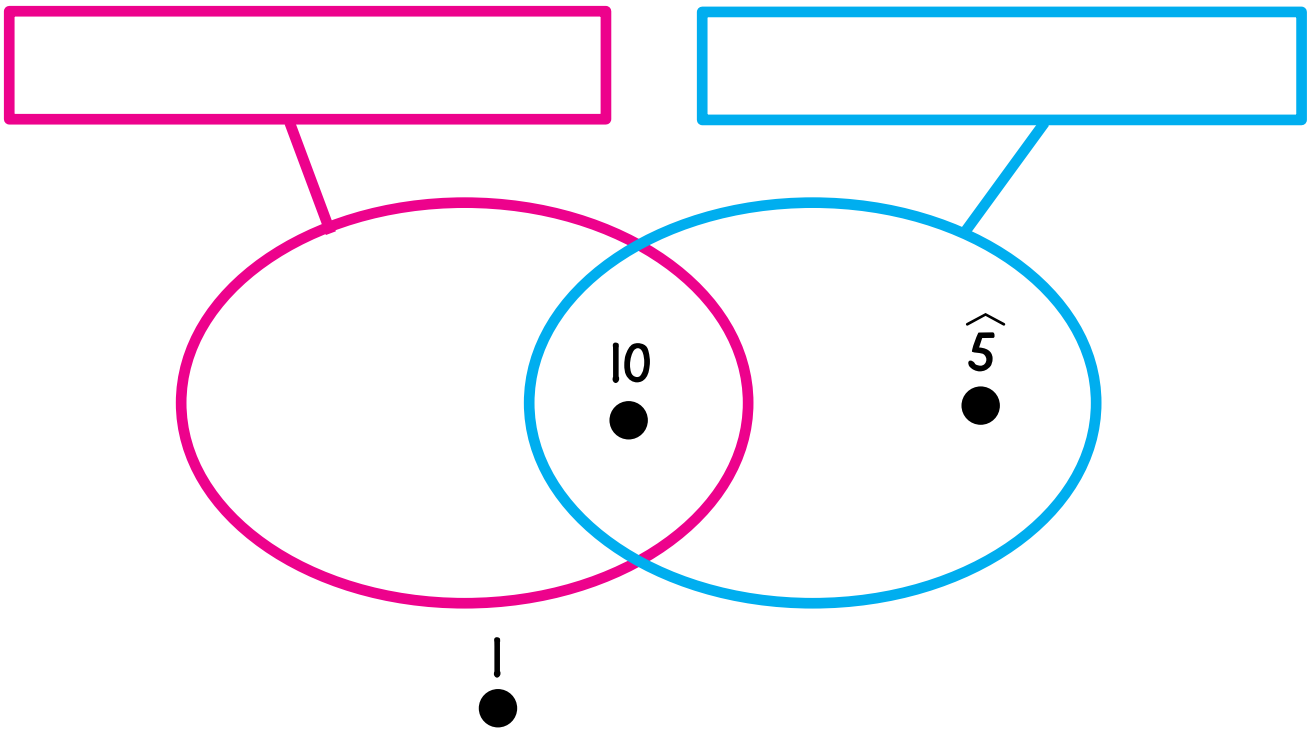
The red label is one of these:

Multiples of 2
Positive prime numbers
Positive divisors of 20
Multiples of 5
Odd numbers
Less than 50

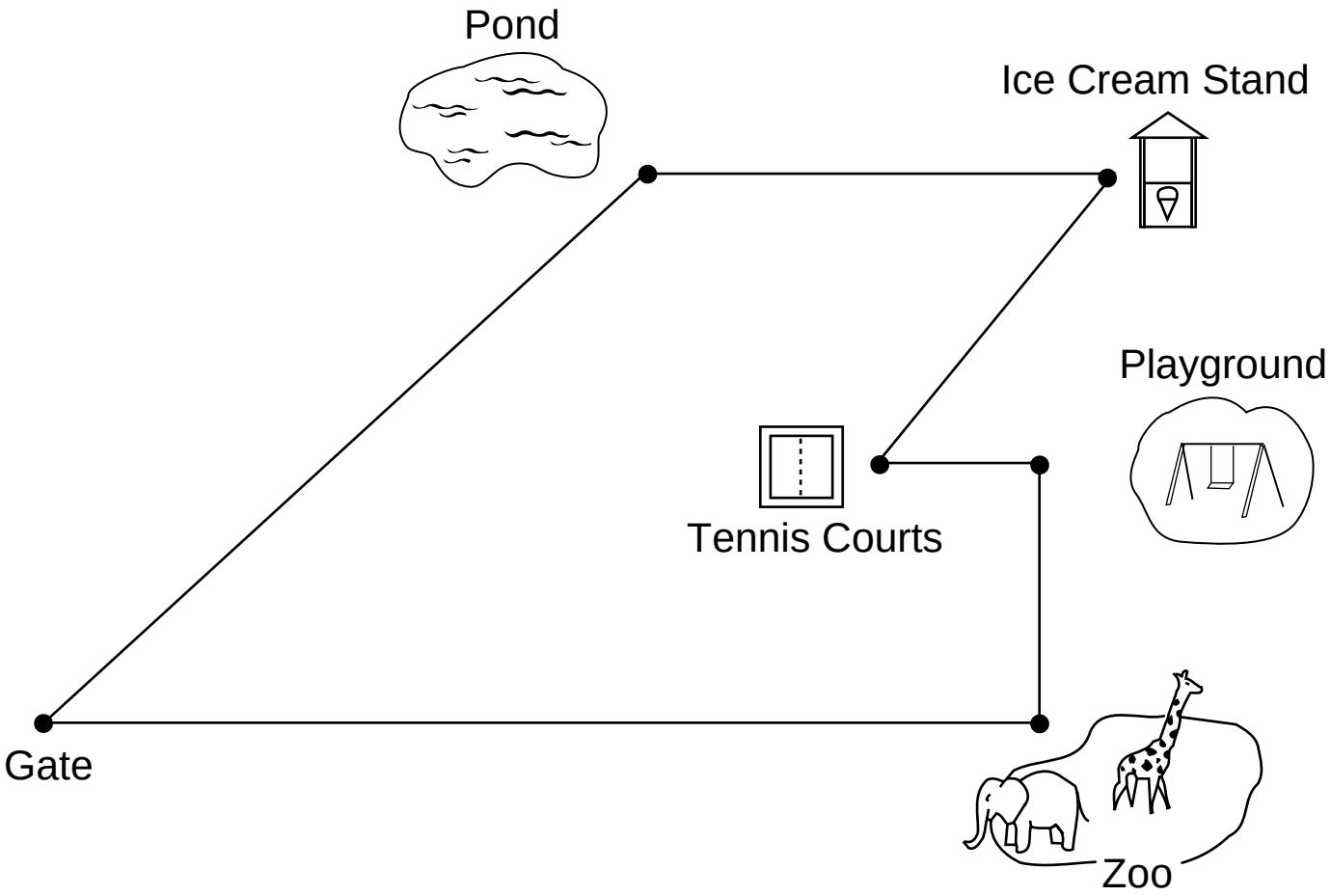
The blue label is one of these:

Multiples of 2
Positive prime numbers
Positive divisors of 20
Multiples of 5
Odd numbers
Less than 50

Label the strings.



Here is a map of the bicycle trails at Kibby Park.



On the map, how long is the shortest bike route from:

the gate to the zoo? _____cm

the zoo to the ice cream stand? _____cm

the ice cream stand to the pond? _____cm

the playground to the pond? _____cm

There are two routes from the gate to the ice cream stand:

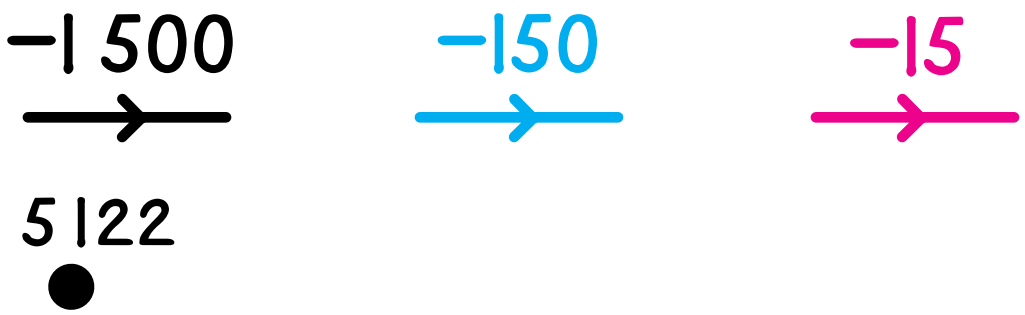
Route **A** goes by the pond.

Route **B** goes by the zoo, playground, and tennis courts.

Which route, **A** or **B**, is shorter? _____

On the map, how much shorter is this route? _____cm

Build an arrow road from 5 122 to the least possible positive number using these arrows.

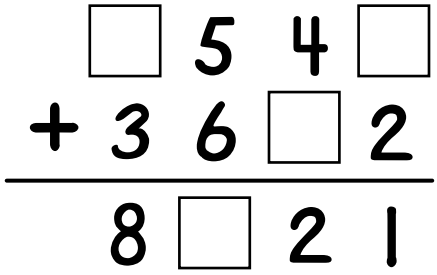


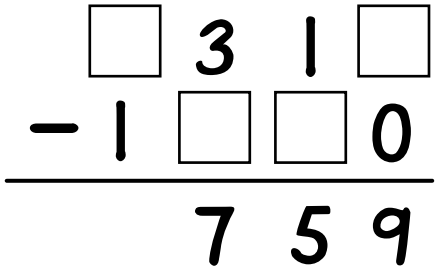
Use the arrow picture to solve this division problem.

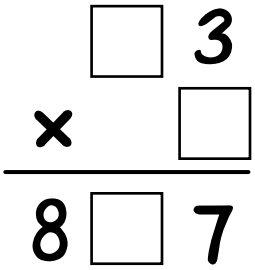
R =

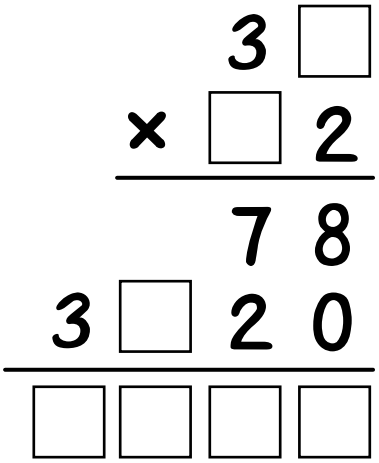
$$15\overline{)5\,122}$$

Fill in the boxes.



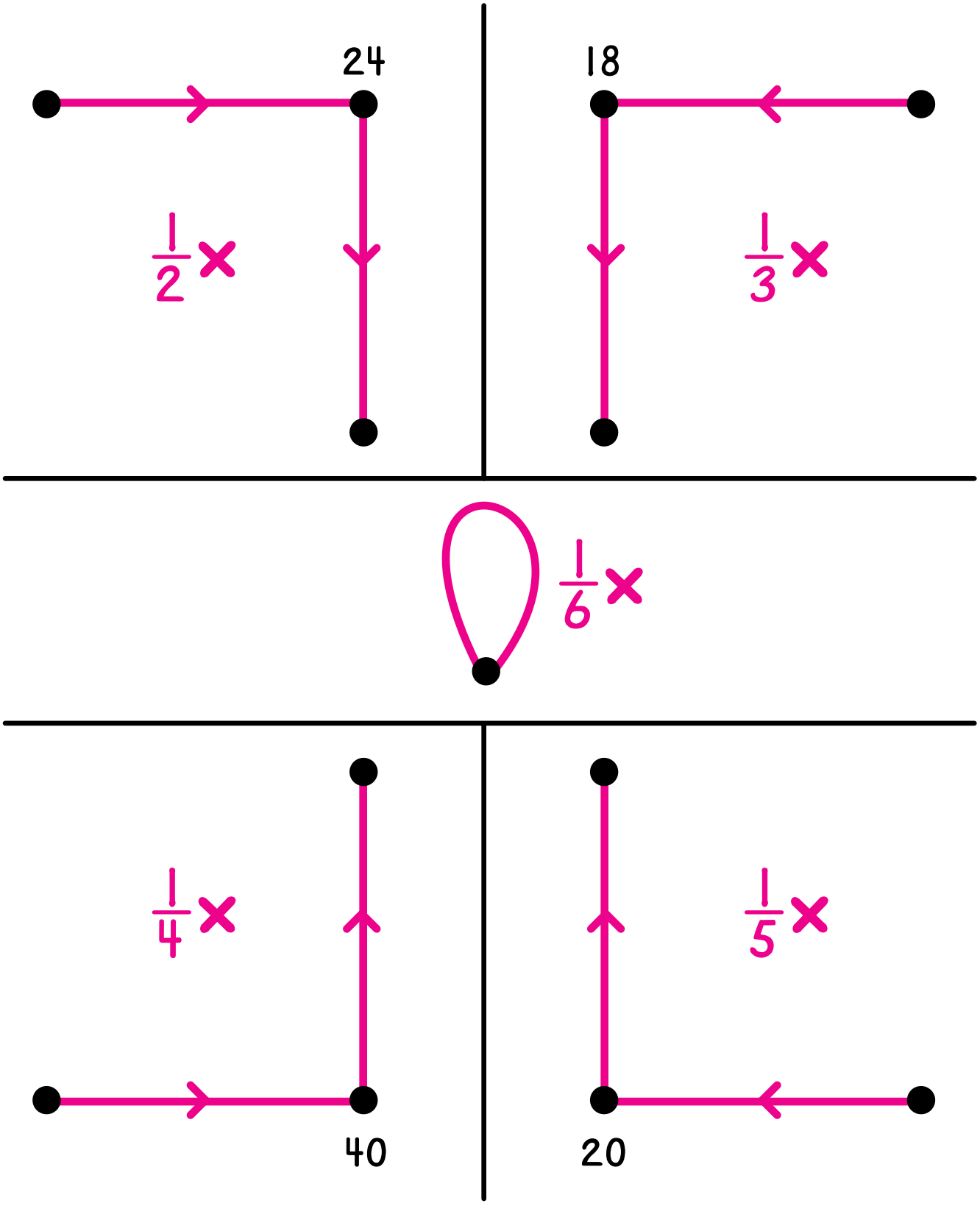




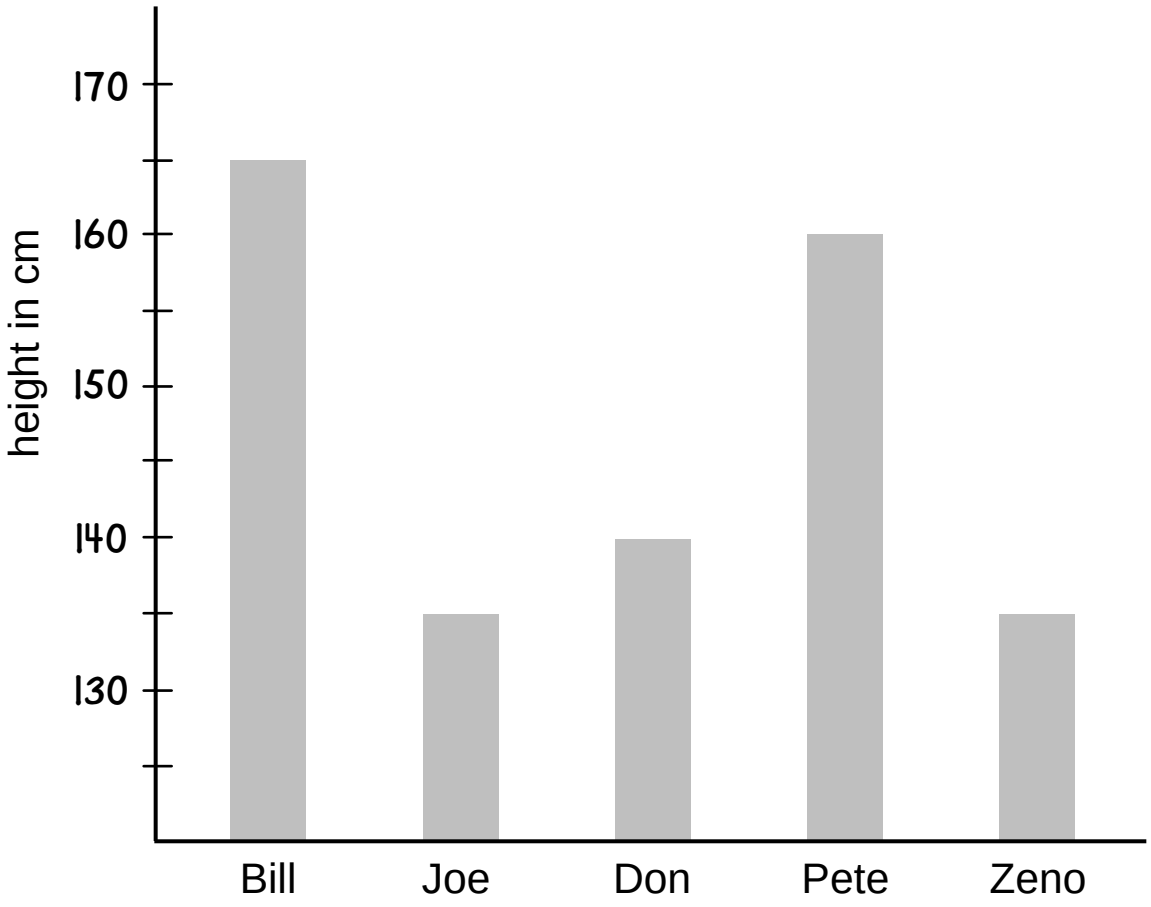


5 □ ÷ 4 = □ 4

Label the dots.



This is a graph of heights of the Karfinkle children.



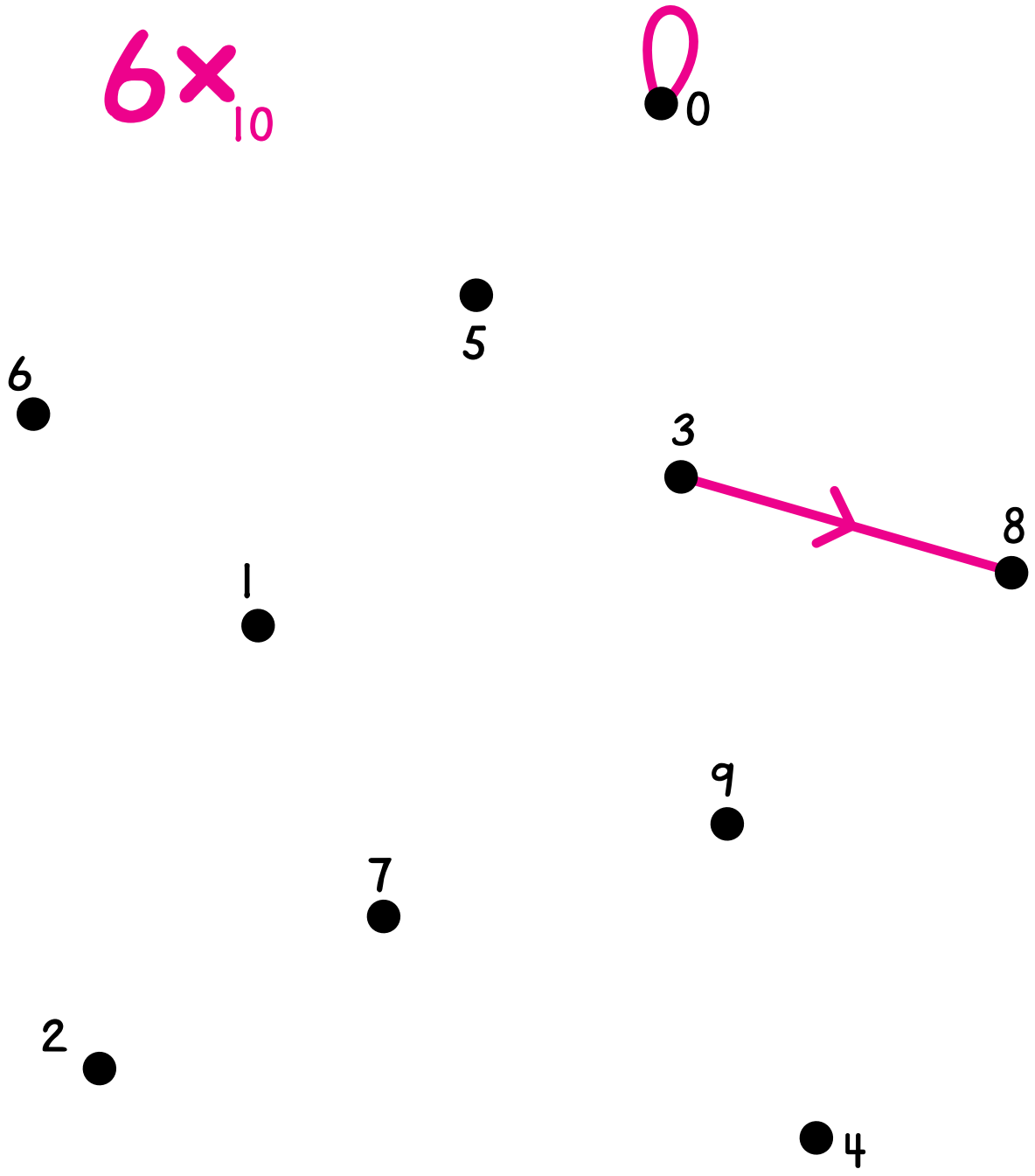
Who is the tallest? _____ the shortest? _____

If the children line up from tallest to shortest, who would be standing in the middle of the line? _____

Which children are the same height? _____
How tall are they? _____cm

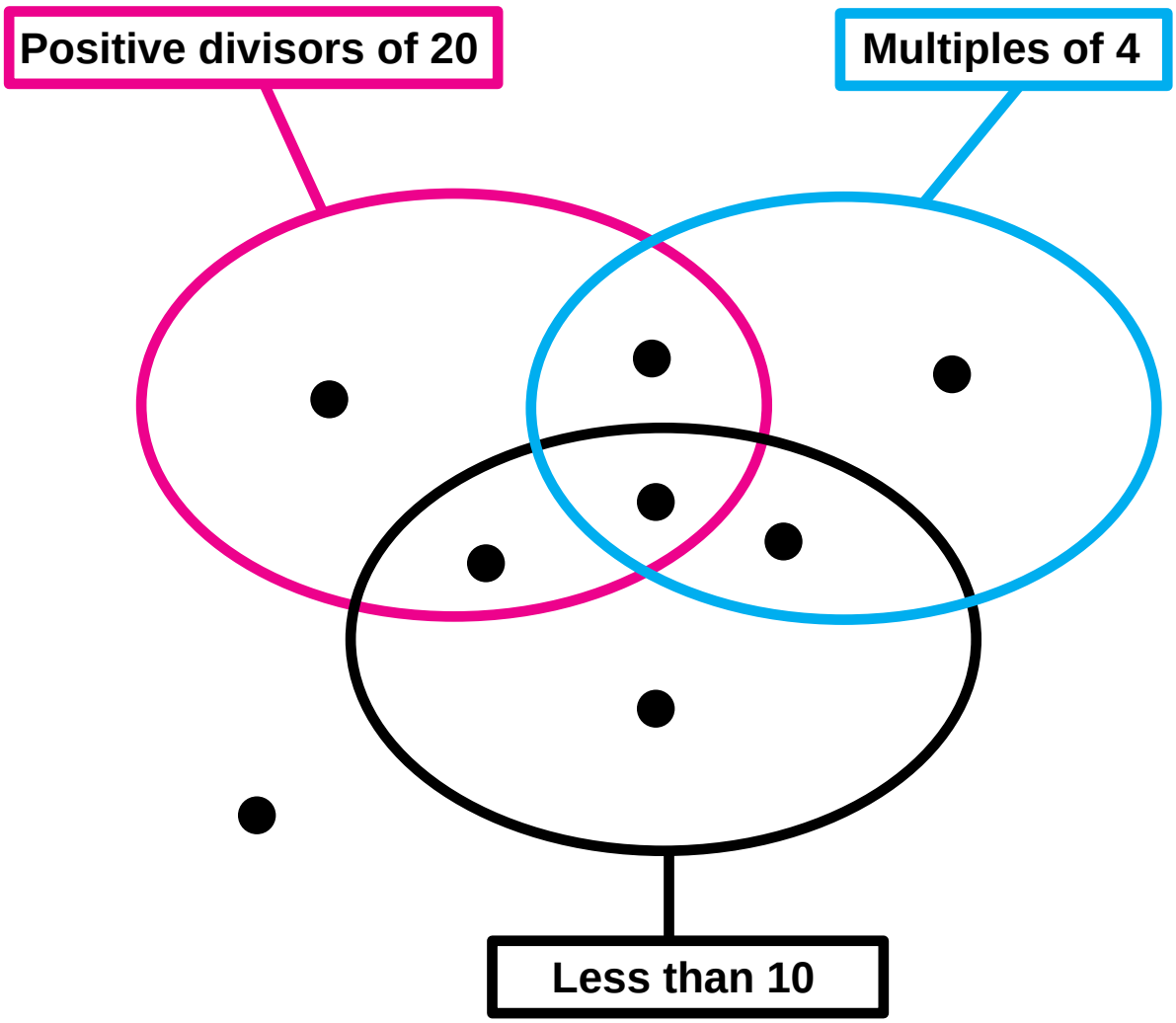
All of the children decide to lie down to see how long a line they can make. How long is the line? _____cm
What is the average height of these children? _____cm

Draw all of the possible red arrows and loops in this picture.

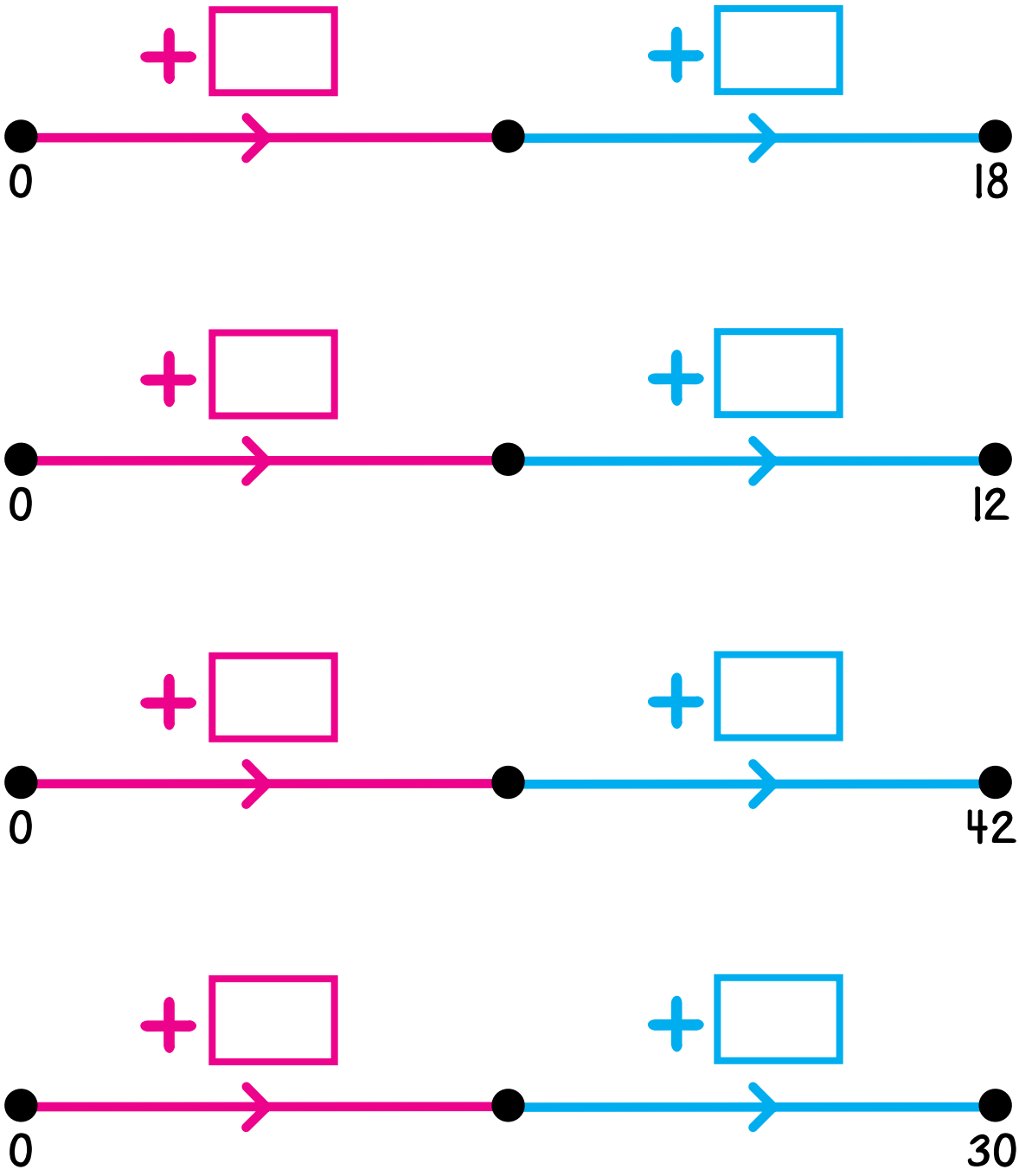


Put these numbers in the string picture.

4 20 7 10 12 4 25 5

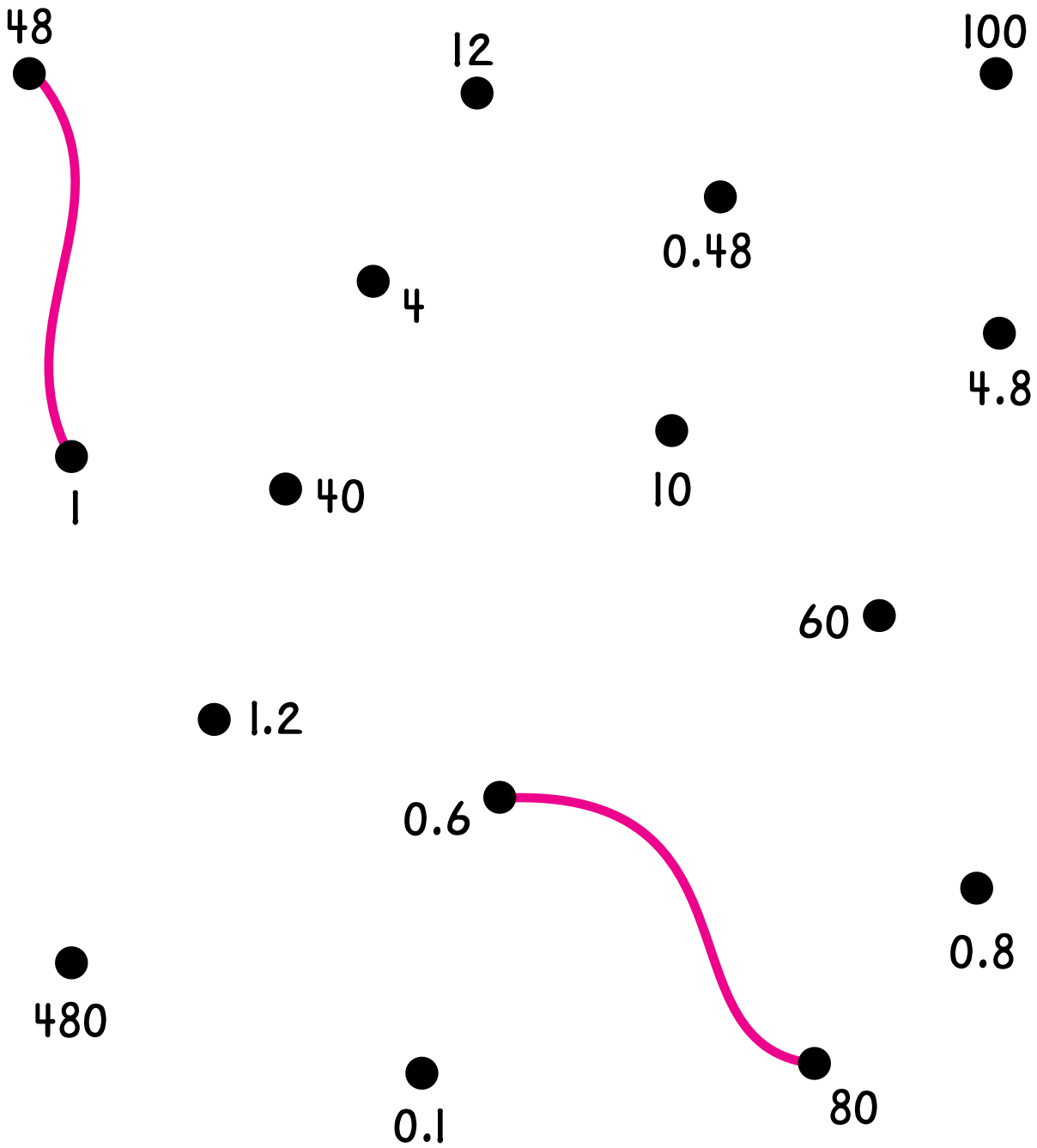


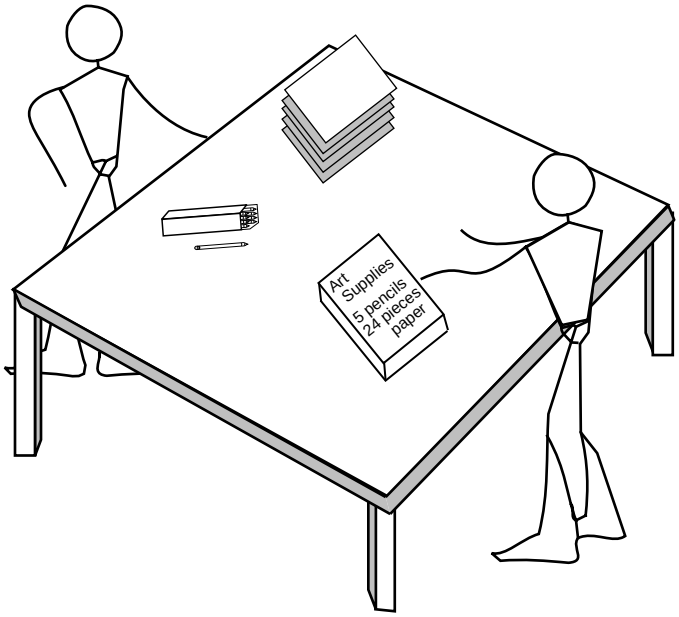
Fill in the boxes for the arrows using only prime numbers.
Many solutions are possible.



Draw all of the possible red cords in this picture. Two are done for you.

Two numbers are joined by a red cord
if and only if
their product is 48.





Marvin and Marie are preparing art supply kits. Each kit has 5 pencils and 24 pieces of paper.

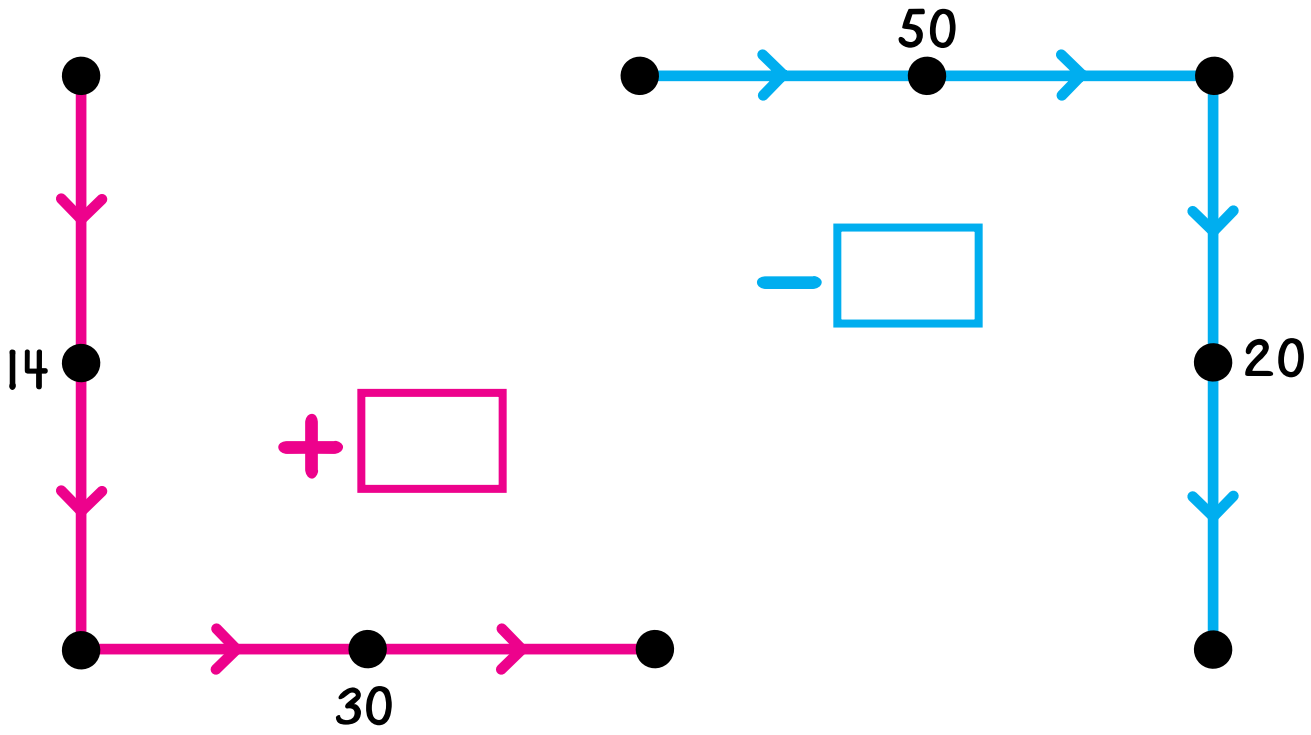
Marvin has 70 pencils. How many pieces of paper does he need to prepare as many kits as possible? _____

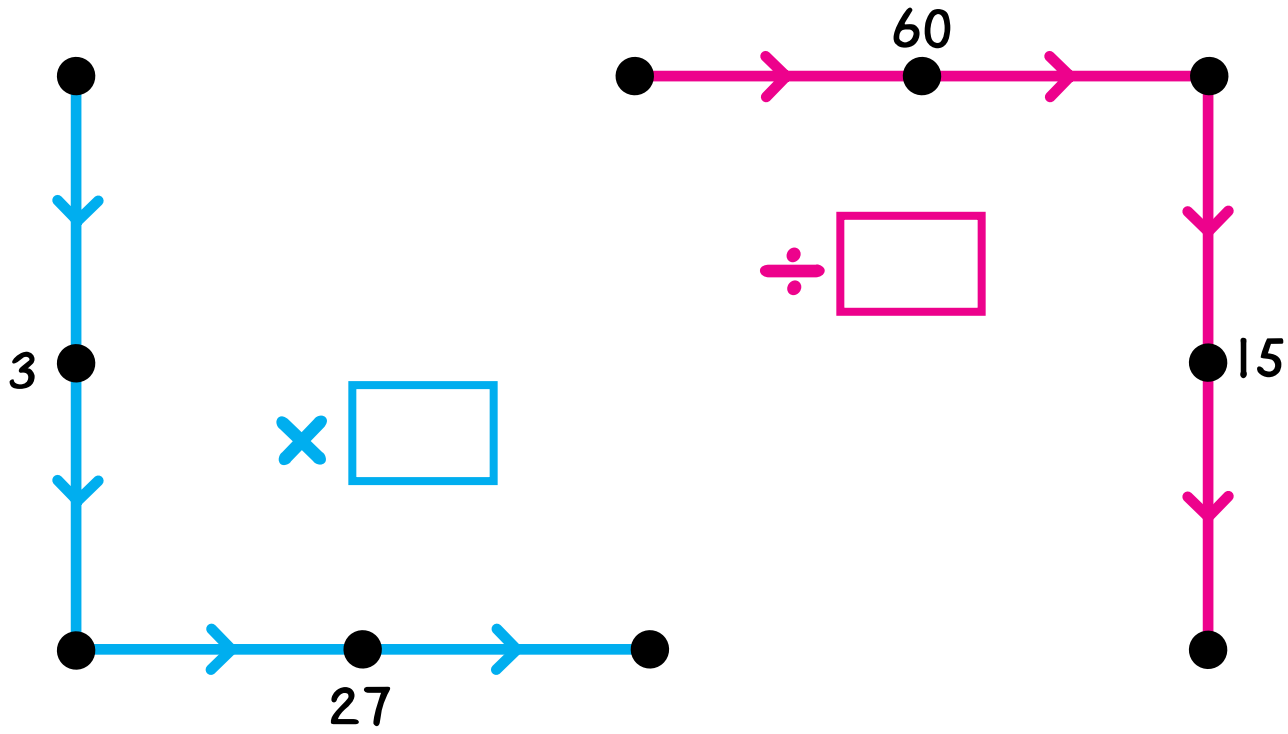
How many kits does he prepare? _____

Marie has a ream of paper, 500 sheets. How many pencils does she need to prepare as many kits as possible? _____

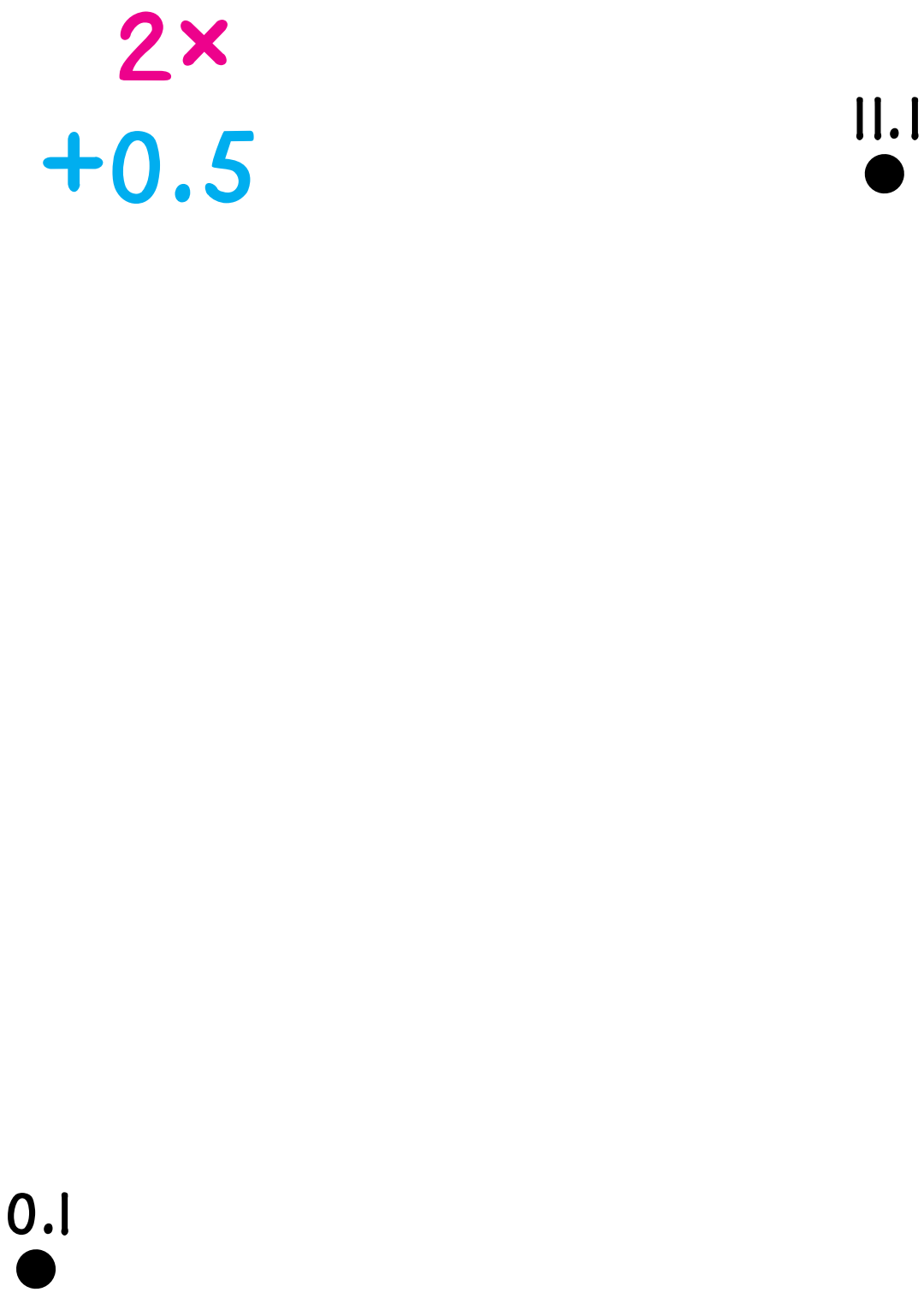
How many kits does she prepare? _____

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

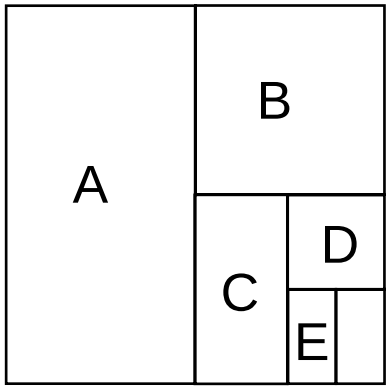




Build an arrow road from 0.1 to 11.1 using 2x and +0.5 arrows.



What fraction of the large square region is each piece?



A _____

B _____

C _____

D _____

E _____

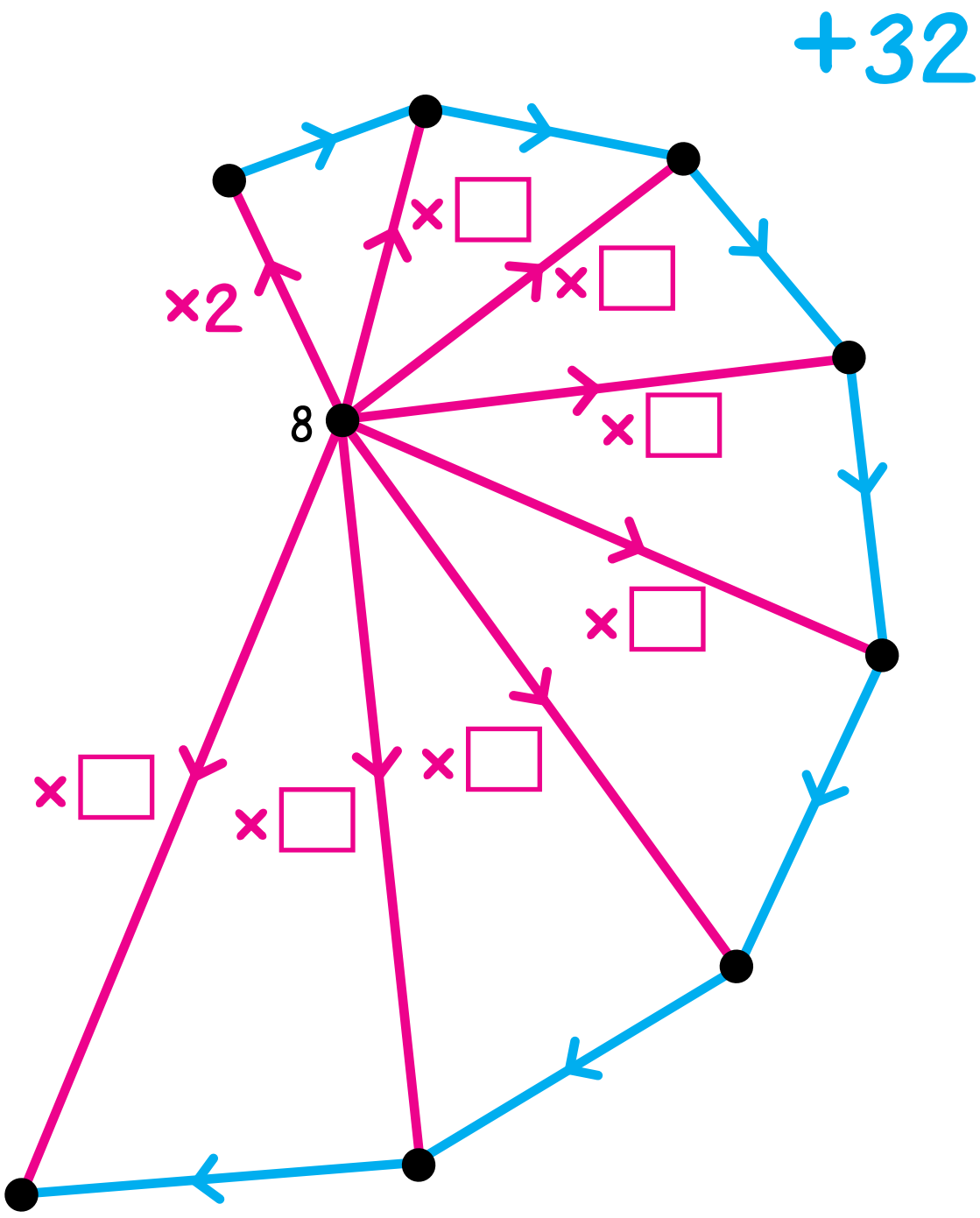
Using the picture above, complete the following equalities.

$$\frac{1}{2} = \frac{\quad}{4} = \frac{\quad}{8} = \frac{\quad}{16} = \frac{\quad}{32}$$

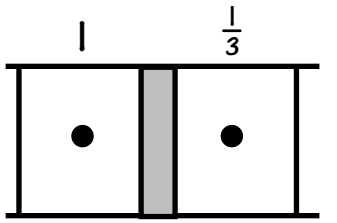
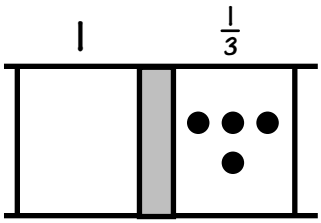
$$\frac{1}{2} + \frac{1}{4} = \frac{\quad}{4} \qquad \frac{1}{2} + \frac{1}{16} = \frac{\quad}{16}$$

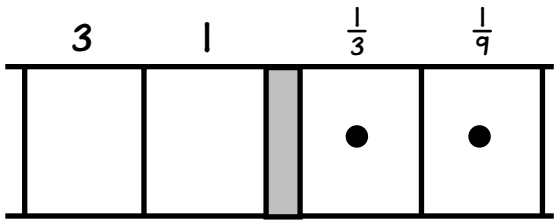
$$\frac{1}{2} + \frac{3}{8} = \frac{\quad}{8} \qquad \frac{3}{32} + \frac{1}{2} = \frac{\quad}{32}$$

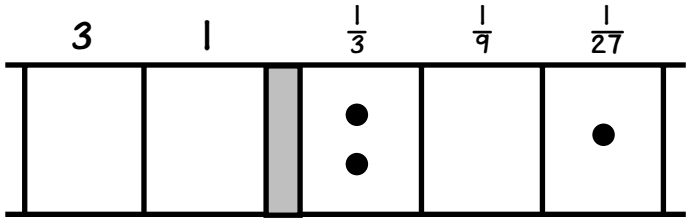
Label the dots and fill in the box for each red arrow.

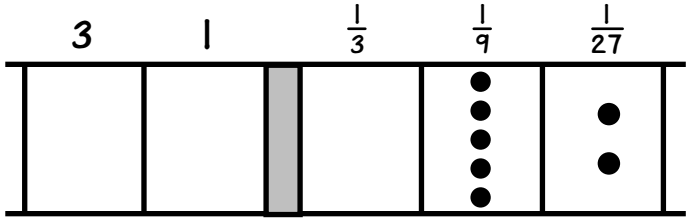


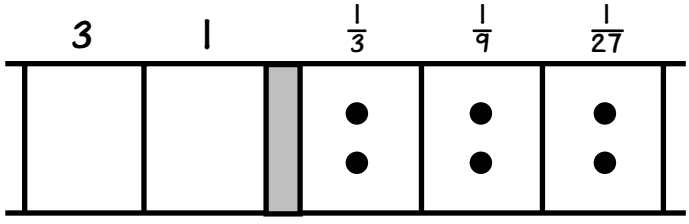
Make backward trades until there are checkers on only one board of the base three abacus. Then complete the fraction. The first problem is done for you.

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

$\frac{1}{3} + \frac{1}{9} =$  $= \frac{\quad}{9}$

$\frac{2}{3} + \frac{1}{27} =$  $= \frac{\quad}{27}$

$\frac{5}{9} + \frac{2}{27} =$  $= \frac{\quad}{27}$

$\frac{2}{3} + \frac{2}{9} + \frac{2}{27} =$  $= \frac{\quad}{27}$

Green peppers cost $0.75 per pound

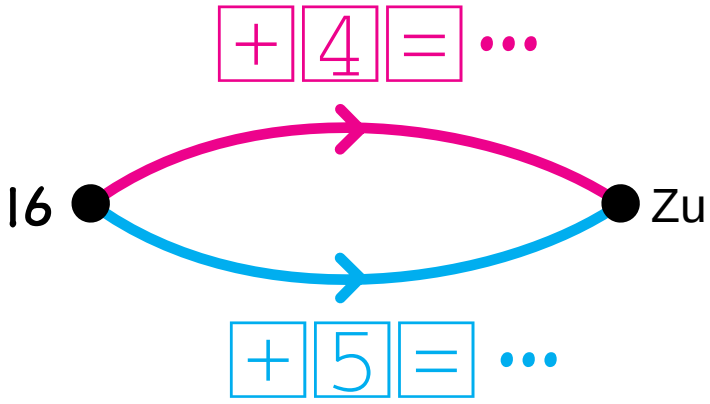
Red peppers cost $2.25 per pound

Kona bought green peppers but the clerk made a mistake and charged her for red peppers. The charge was $6.75. How much was Kona overcharged? _____

Dave has $7.50 and wants to buy some peppers, both red and green. He decides to buy two pounds of red peppers. How many pounds of green peppers can he buy? _____

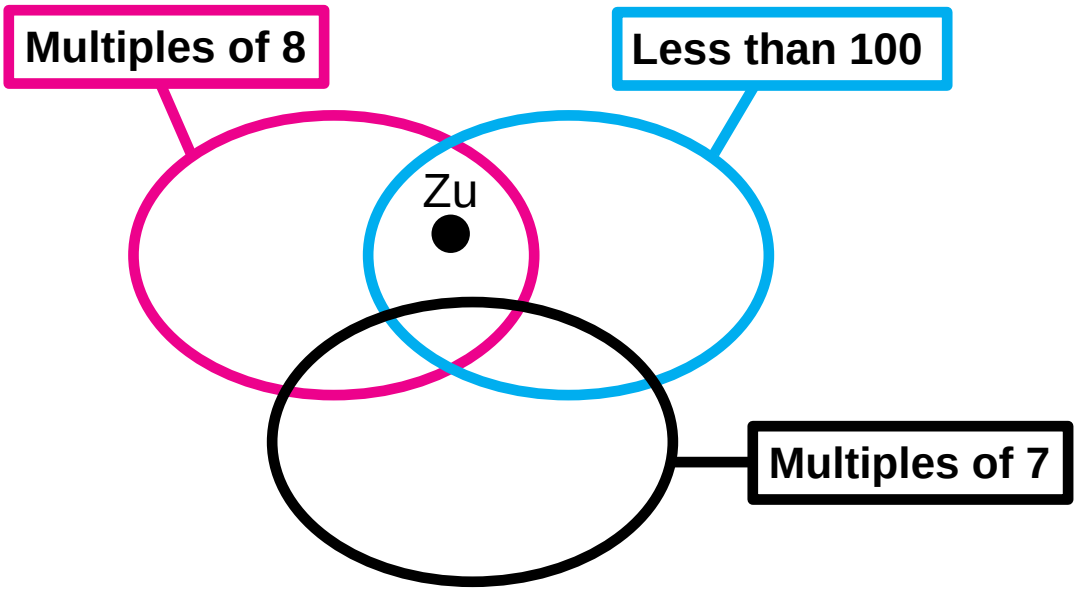
Zu is a secret number.

Clue 1



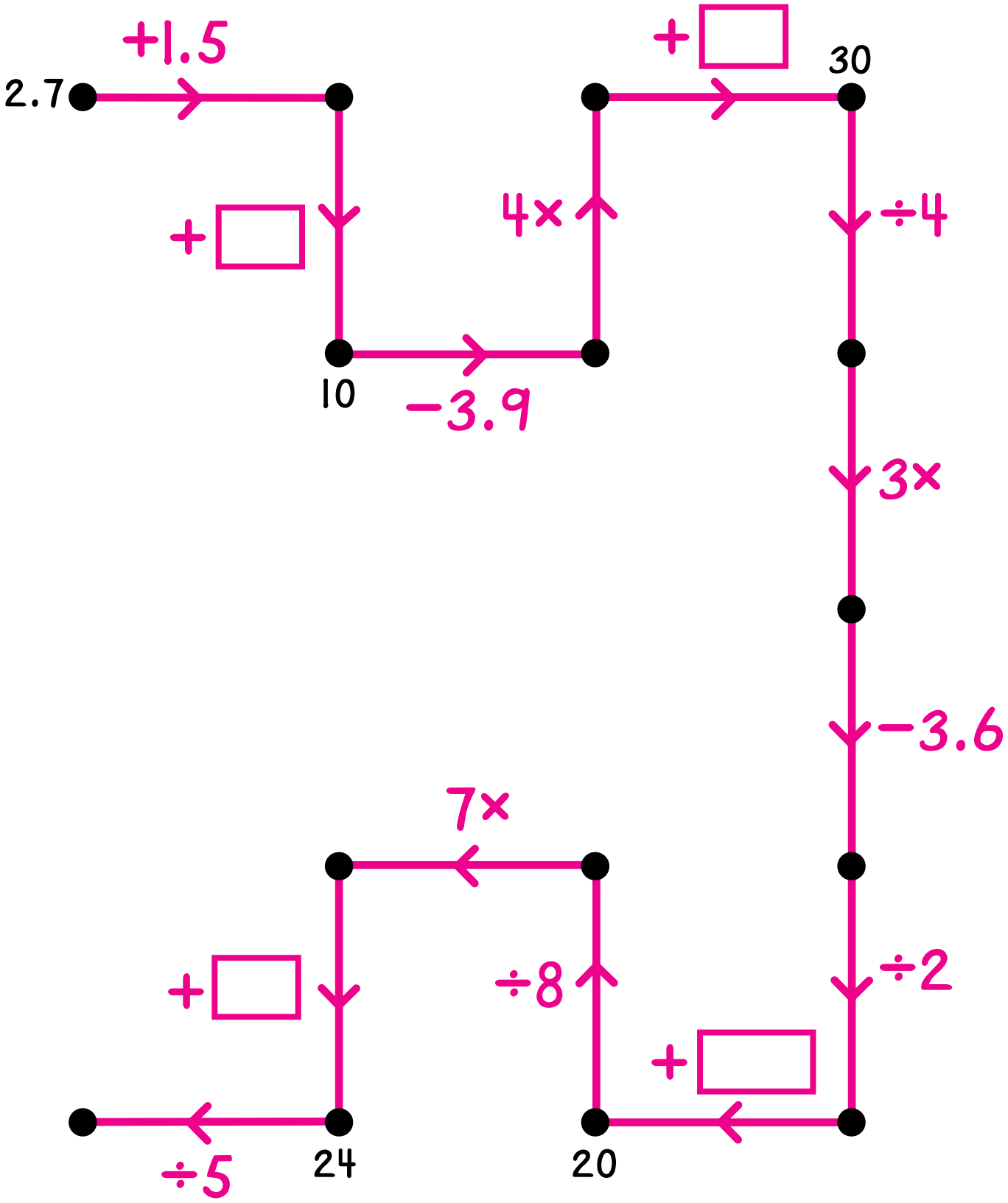
Zu could be _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, and so on.

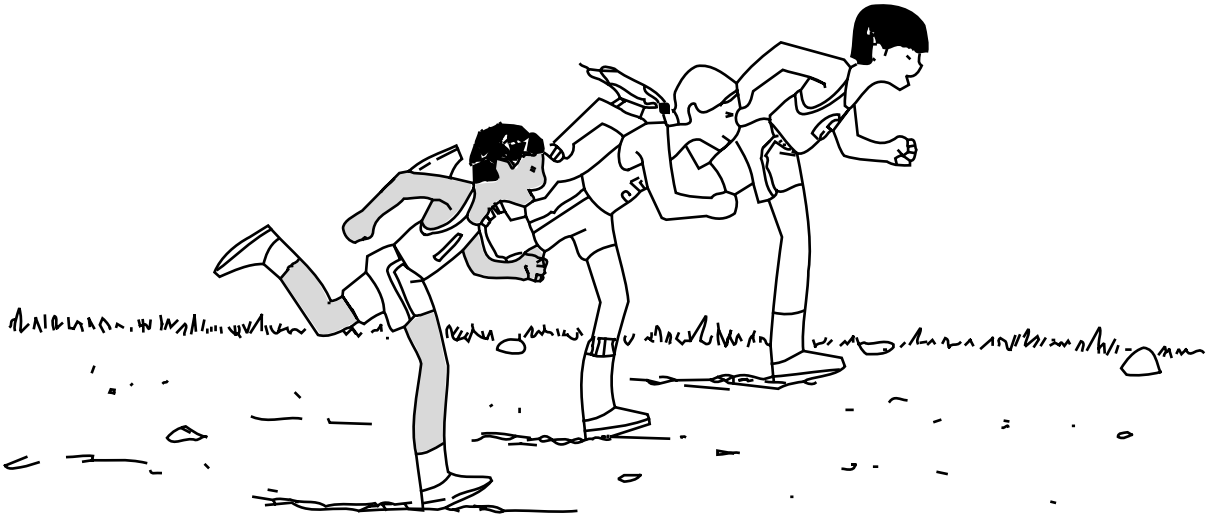
Clue 2



Who is Zu? _____

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





Shawn, Mia, and Ling are marathon runners. They ran in four different races this spring, but Shawn was unable to run in two of the races and Ling in one of the races. Their times are given in the table below.

	First Race	Second Race	Third Race	Fourth Race	Average Time
Shawn	2 hrs 40 mins	-------	2 hrs 52 mins	-------	
Mia	2 hrs 45 mins	2 hrs 46 mins	3 hrs 11 mins	3 hrs 6 mins	
Ling	2 hrs 51 mins	2 hrs 57 mins	-------	2 hrs 39 mins	

Who came in first in the most races? _____

Who had the fastest time? _____

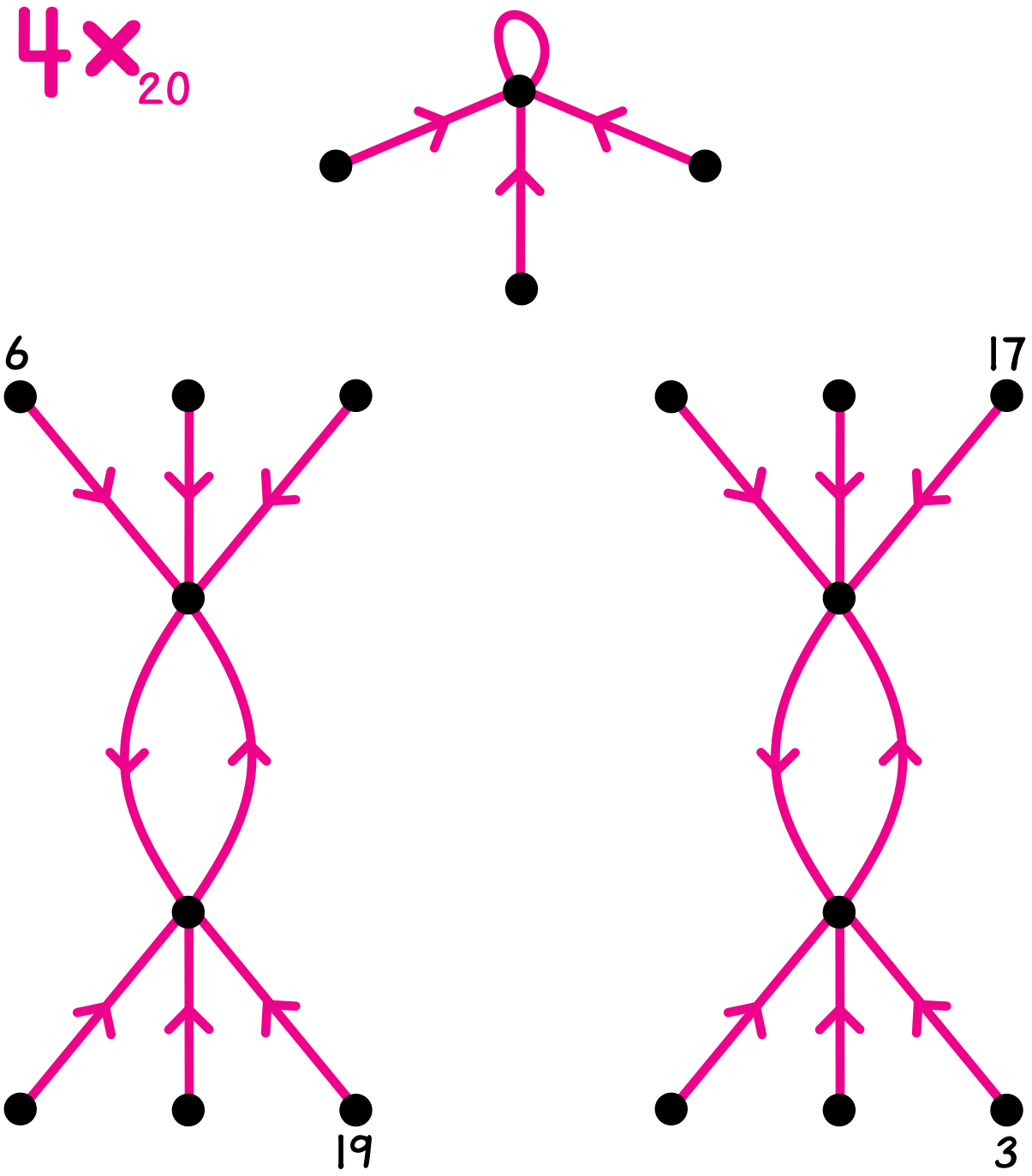
Who had the best average time? _____

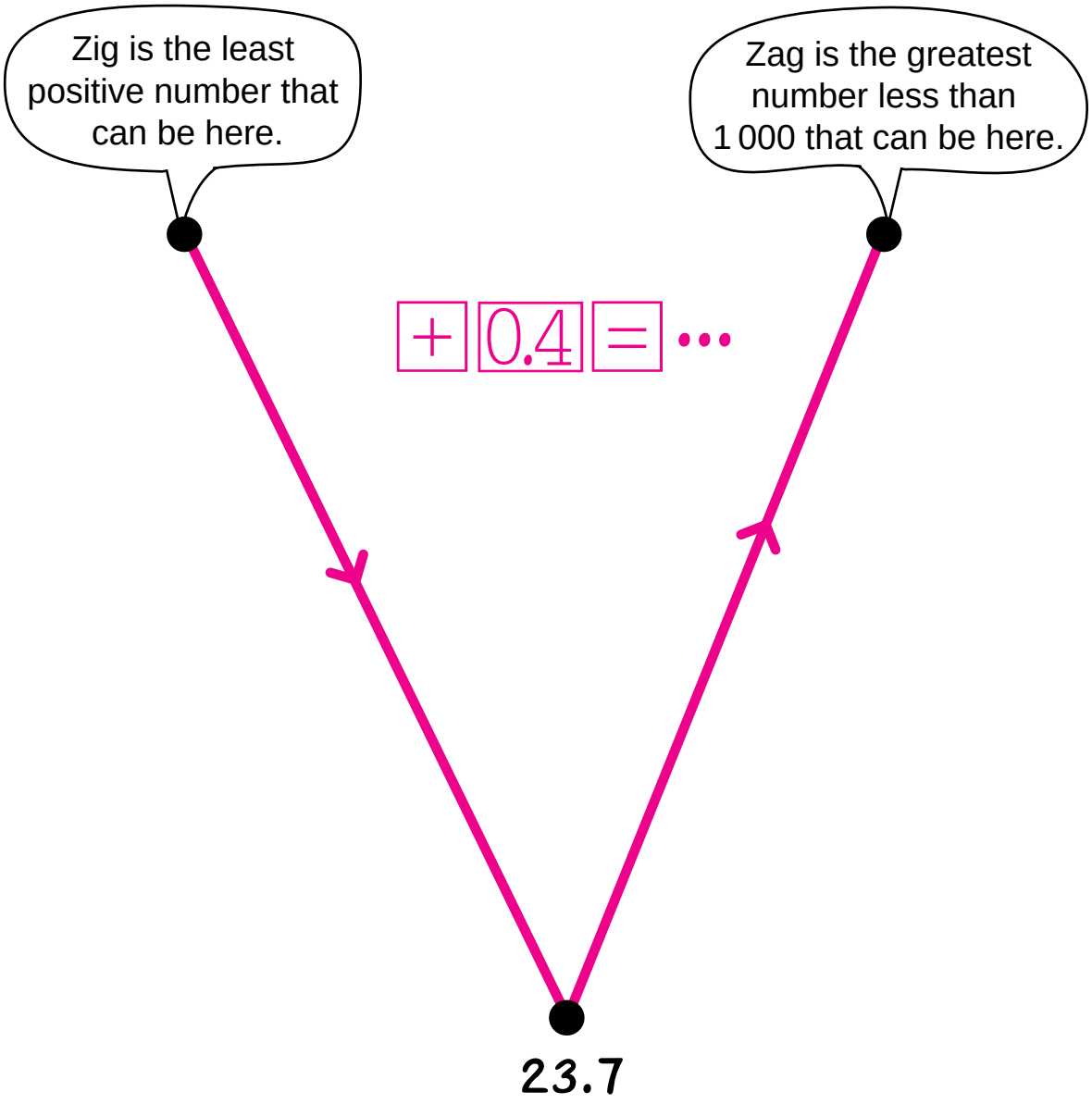
Put the 20 number friends

0 1 2 3 4 5 6 7 8 9

10 11 12 13 14 15 16 17 18 19

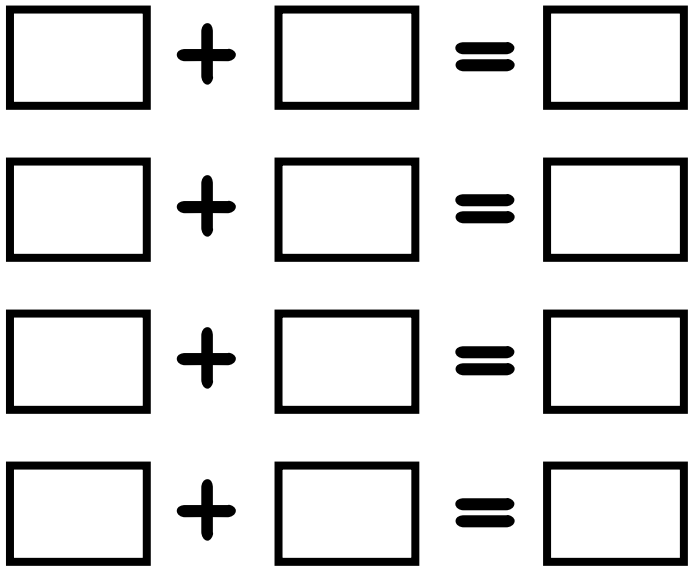
into this picture. Some numbers are already placed.





Who is Zig? _____ Who is Zag? _____

Fill in the boxes with the whole numbers 1 through 12.
Use each number once and make all the equations true.



Fill in the boxes with the whole numbers 1 through 12.
Use each number once and make all the equations true.