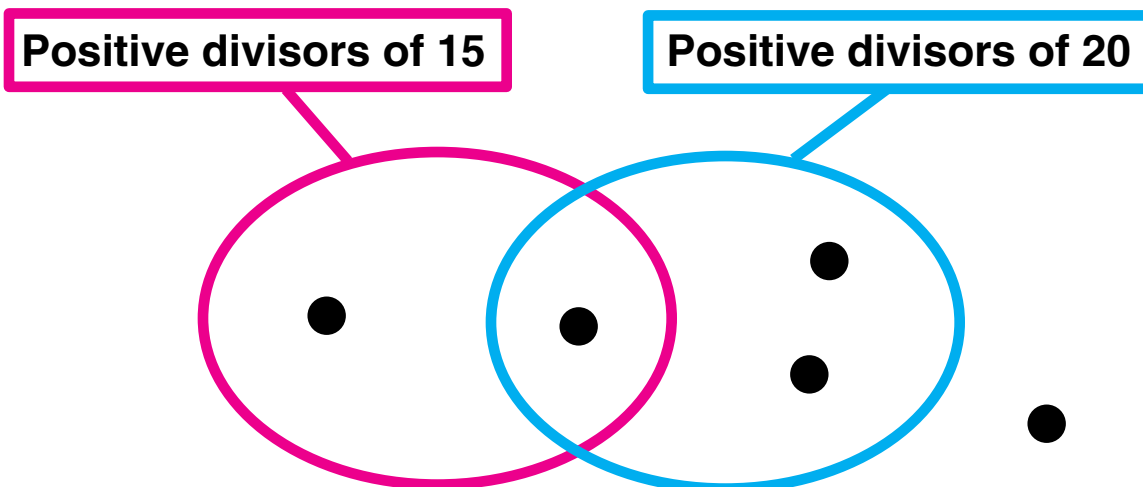


Name _____

Arcade of Problems #3

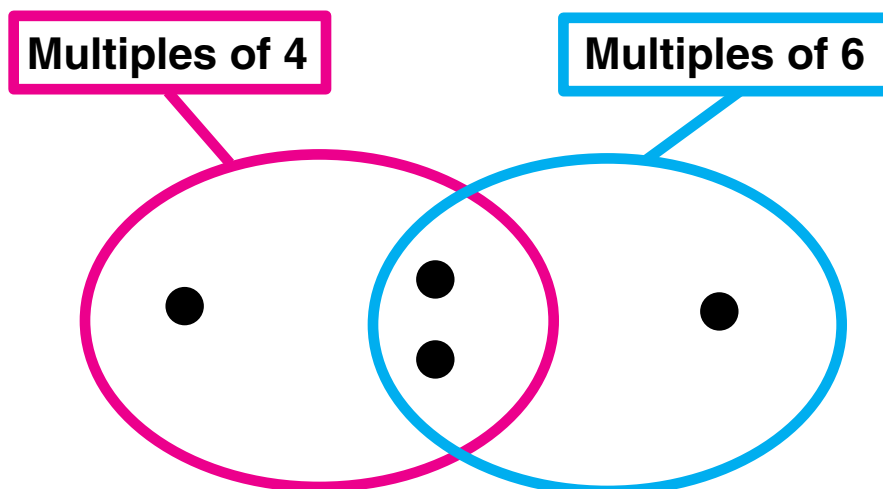
Put each of these numbers in the string picture.

3 4 5 7 10



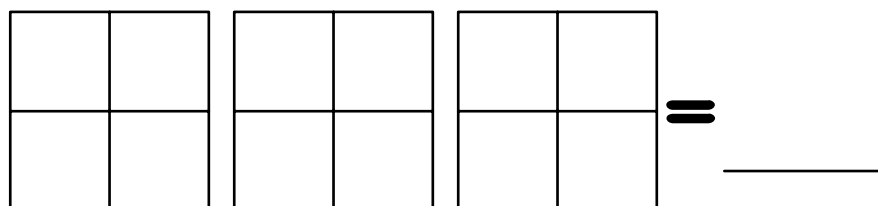
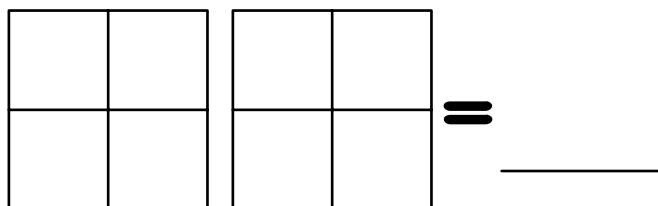
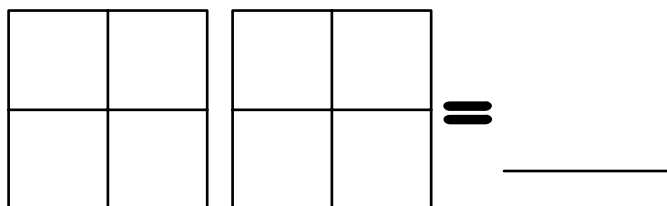
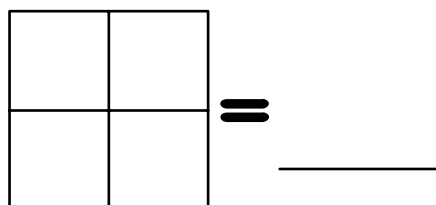
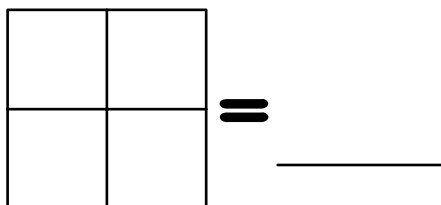
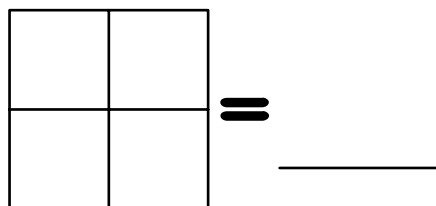
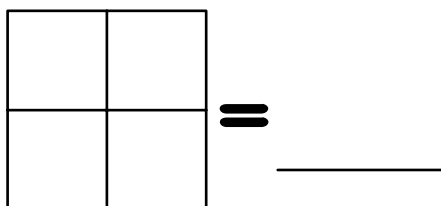
Put each of these numbers in the string picture.

8 12 15 18 36



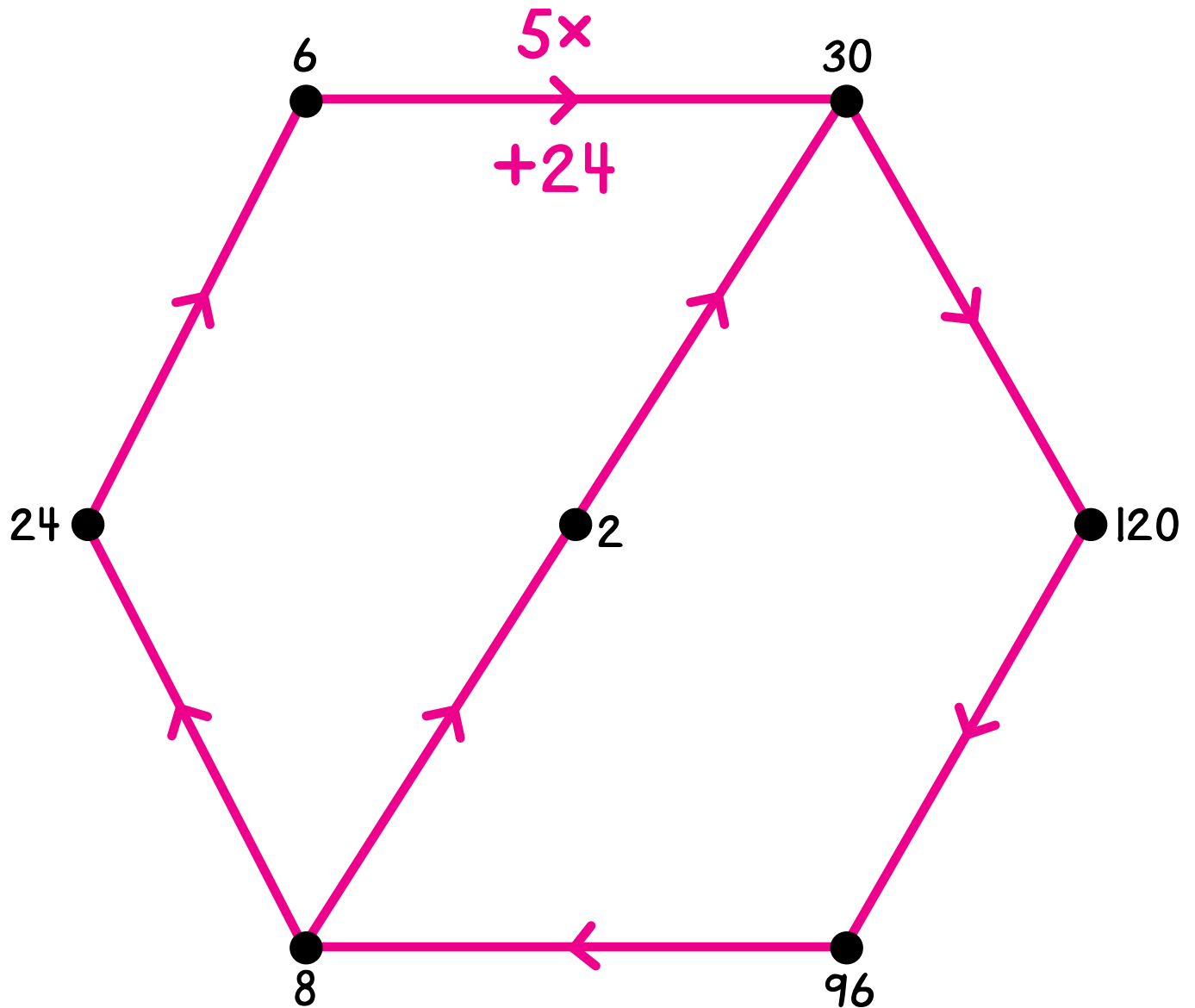
Put any number you wish on the Minicomputer using exactly one negative checker and exactly one of these checkers:

- 2
3
4
5
6
7
8
9
10

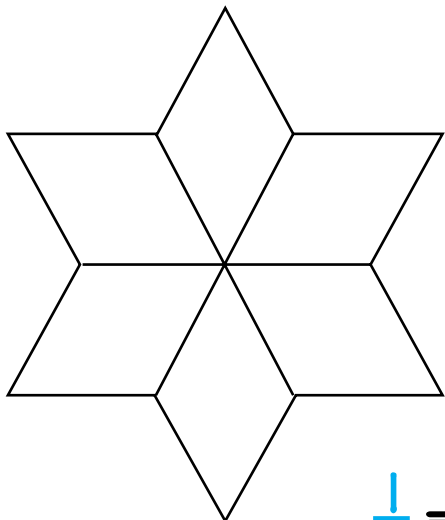


Label the arrows; try to label some arrows in two ways.
One is done for you.

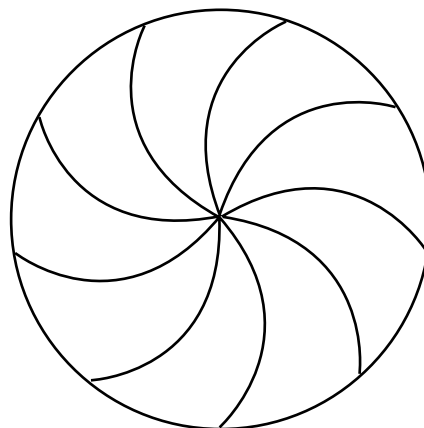
Many solutions are possible.



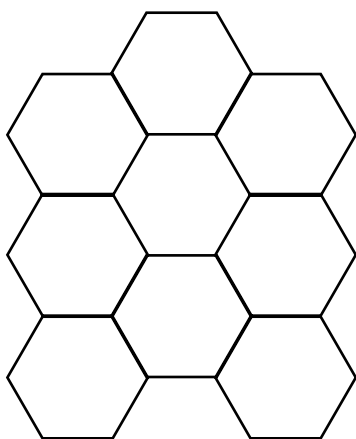
Color one-third of each shape blue. Write another name for $\frac{1}{3}$ as suggested by the picture.



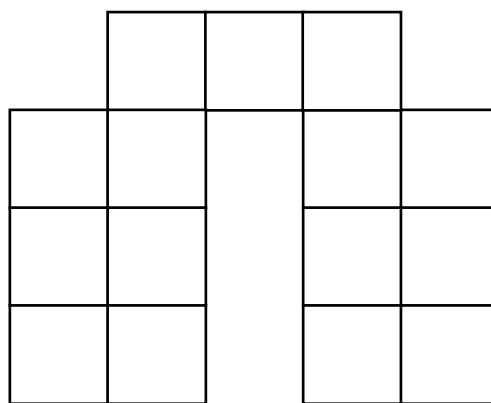
$$\frac{1}{3} = \underline{\quad}$$



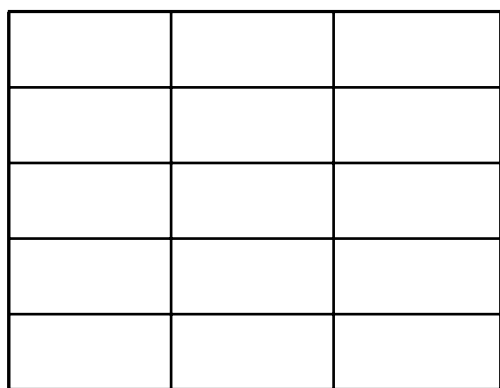
$$\frac{1}{3} = \underline{\quad}$$



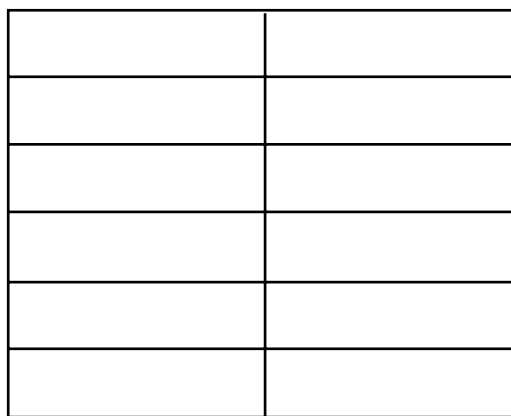
$$\frac{1}{3} = \underline{\quad}$$



$$\frac{1}{3} = \underline{\quad}$$

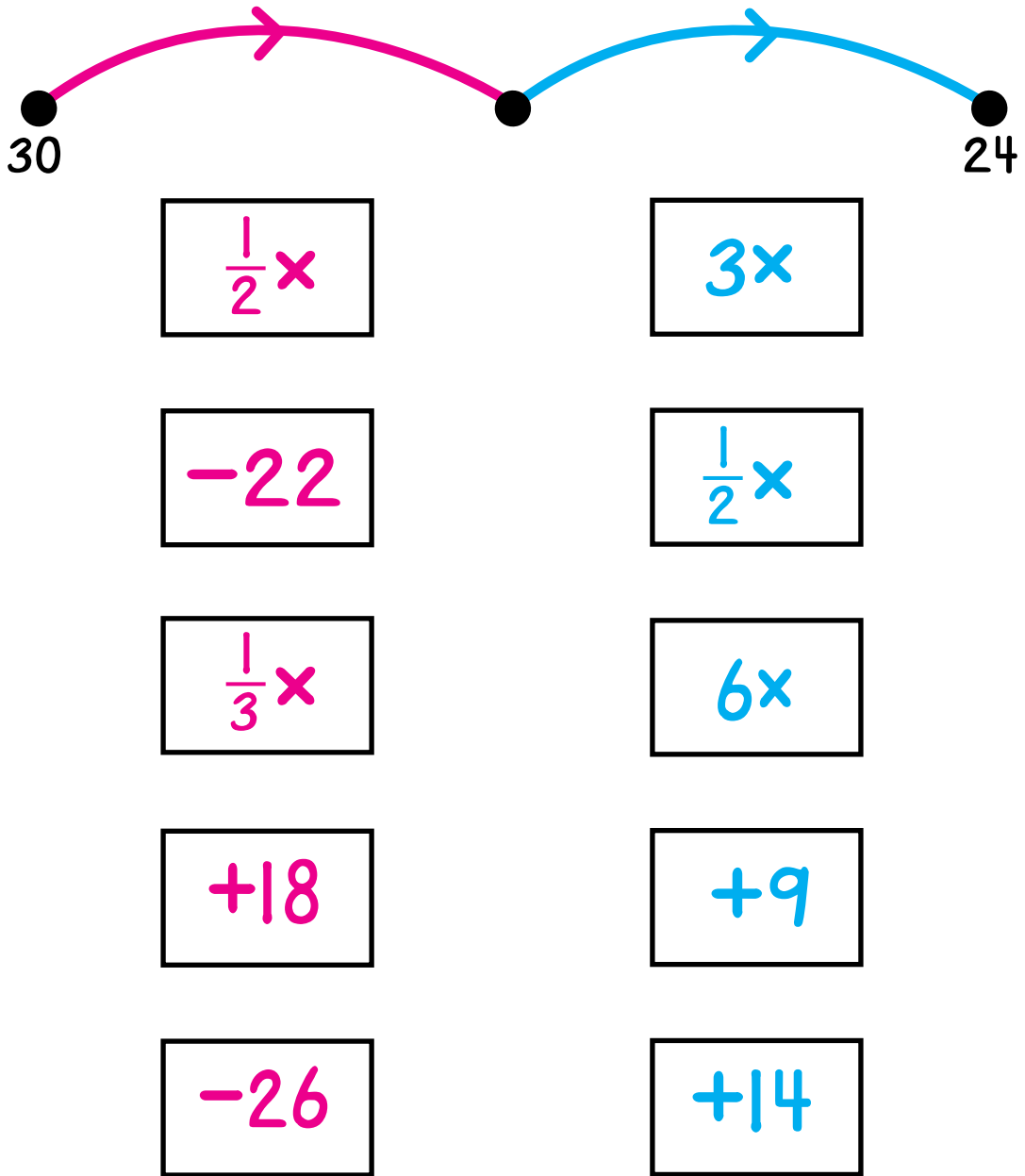


$$\frac{1}{3} = \underline{\quad}$$



$$\frac{1}{3} = \underline{\quad}$$

Pair the tags.



The eraser gremlin has erased the decimal point in each result.
Put in decimal points so that the calculations are correct.

$$3.73 + 9 + 0.37 = 131$$

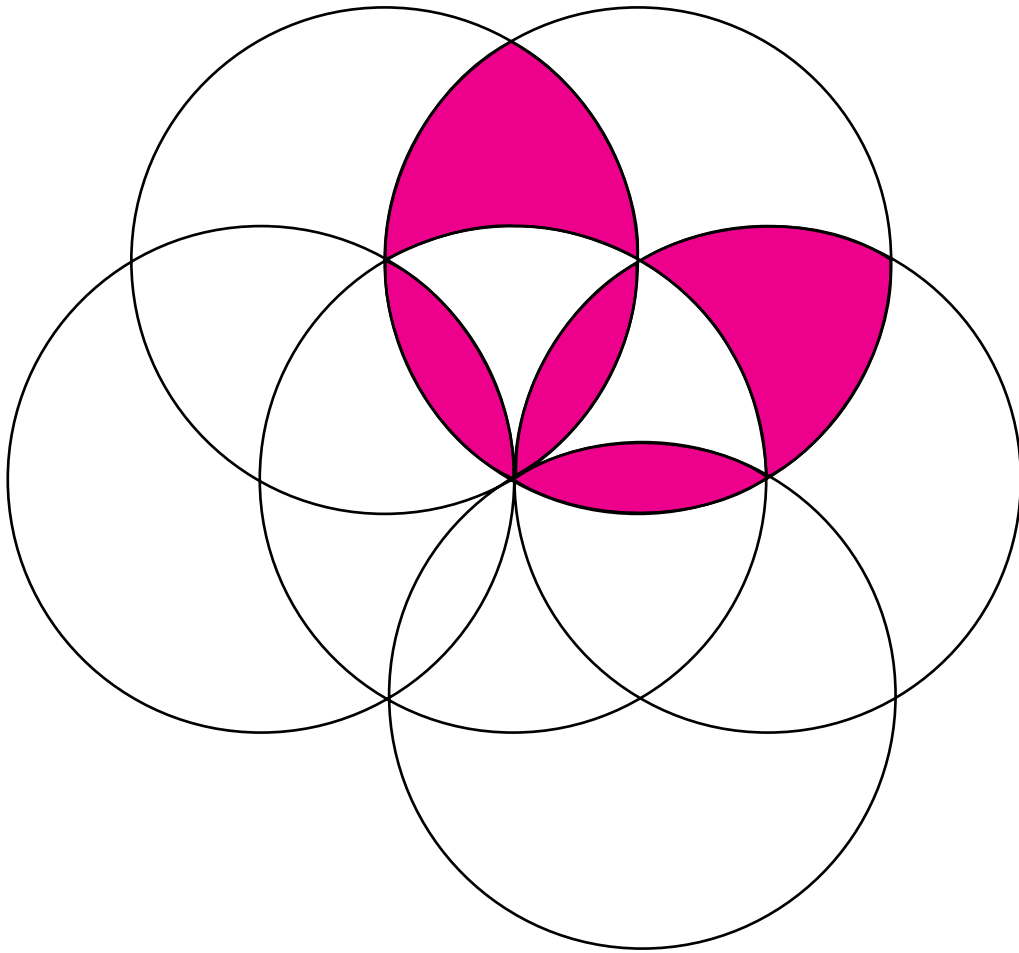
$$297.7 - 2.977 = 294723$$

$$13 - 1.673 = 11327$$

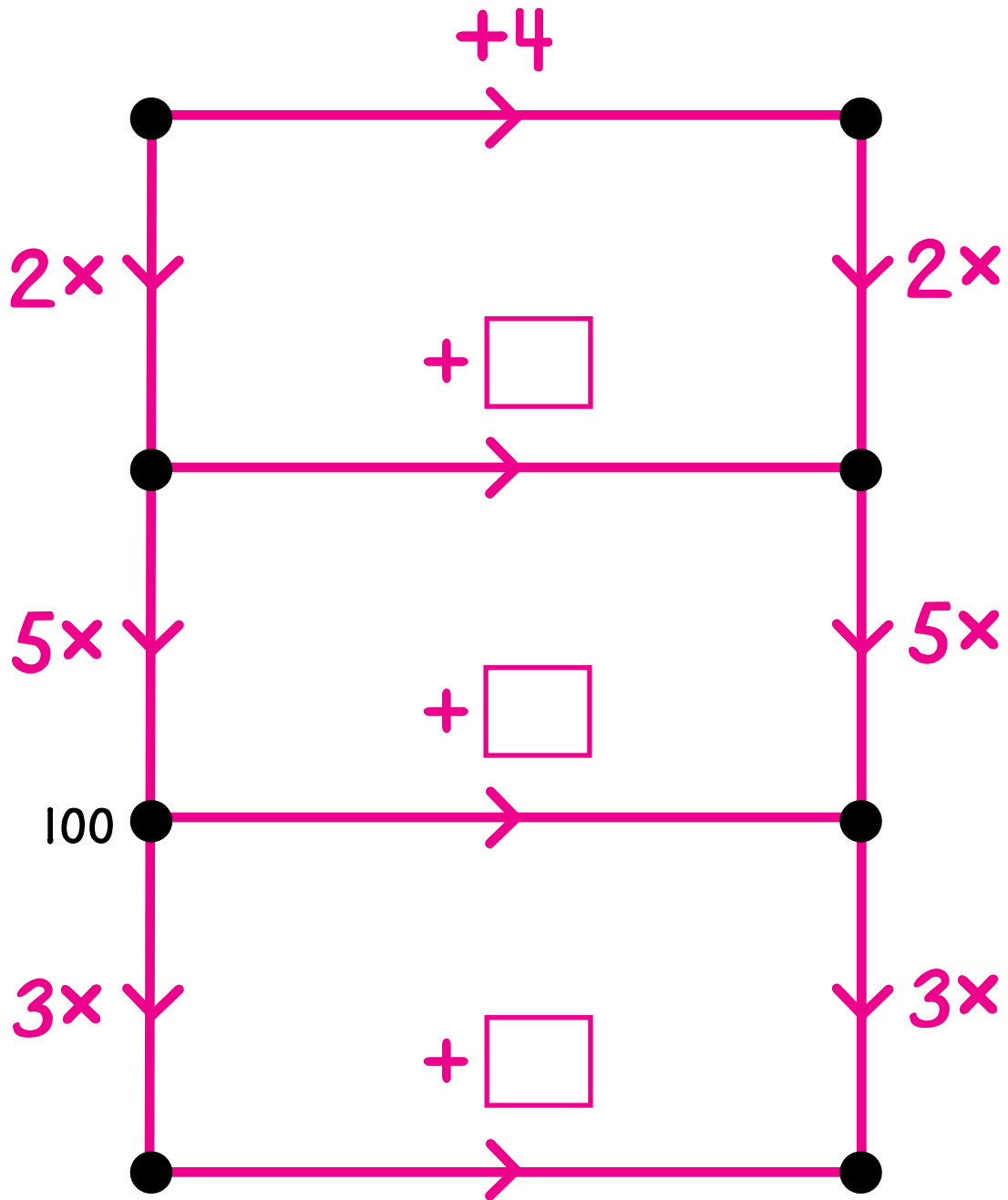
$$28.3 \times 0.93 = 26319$$

$$35.9 \times 60.12 = 2158308$$

Complete this design with a compass and red crayon so that you get a six-pointed red flower.



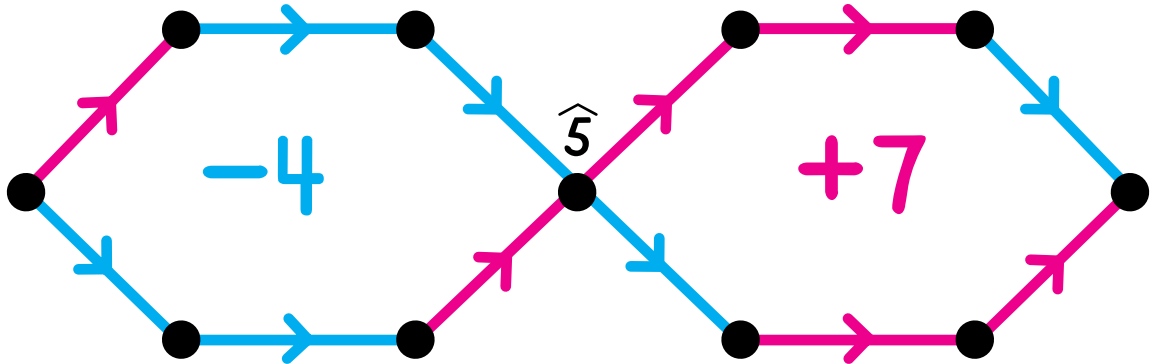
Label the dots and fill in the boxes for the arrows.



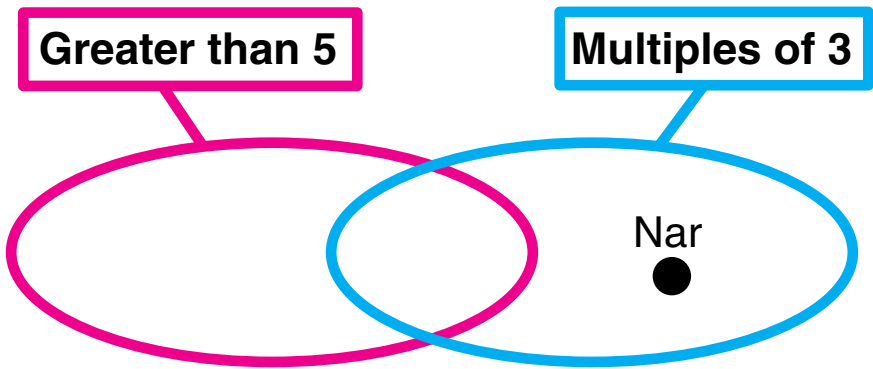
Nar is a secret number.

Clue 1

Nar is in this arrow picture.

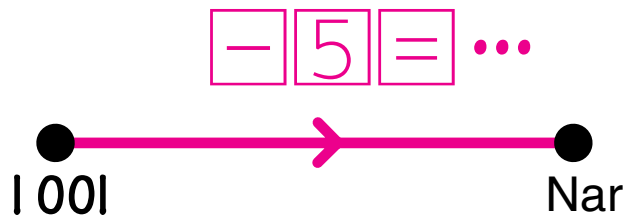


Clue 2



Nar could be _____, _____, or _____.

Clue 3



Who is Nar? _____

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

$$\begin{array}{r}
 5 \square 2 7 \\
 + 7 \square 9 \\
 \hline
 \square 0 8 \square
 \end{array}$$

$$\begin{array}{r}
 6 \square \\
 5 8 2 \\
 + 1 \square 7 \\
 \hline
 \square 8 7
 \end{array}$$

$$\begin{array}{r}
 6 2 \square 7 \\
 - \square 9 3 \square \\
 \hline
 1 \square 5 4
 \end{array}$$

$$\begin{array}{r}
 4 \square 7 \square 4 \\
 - \square 2 \square \\
 \hline
 \square 3 4 8 4
 \end{array}$$

Build an arrow road from 10 to 11. Each arrow must be for one of these relations.

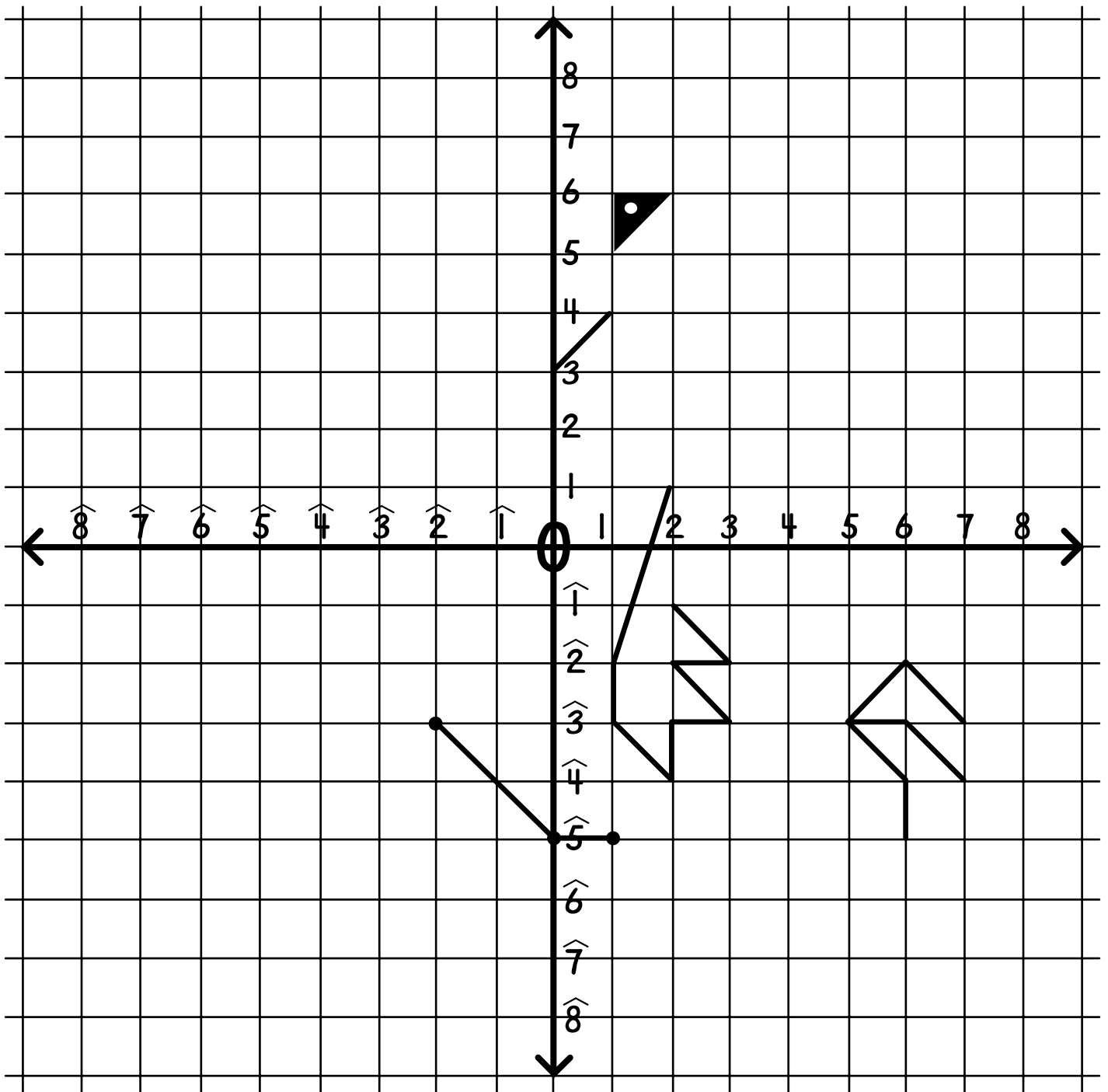
$+2$ $+8$ -2 -8 $\times 2$ $\times 8$ $\div 2$ $\div 8$

10
●

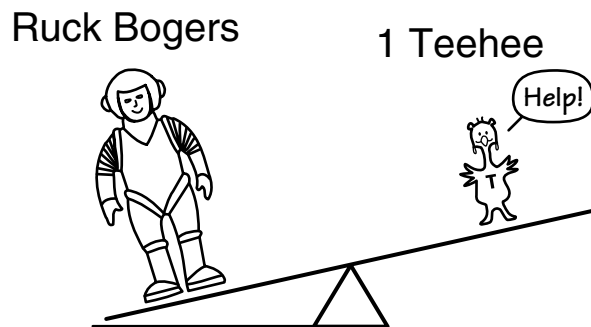
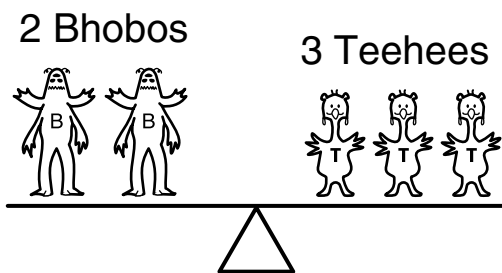
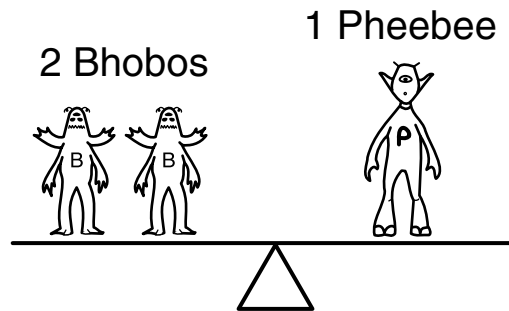
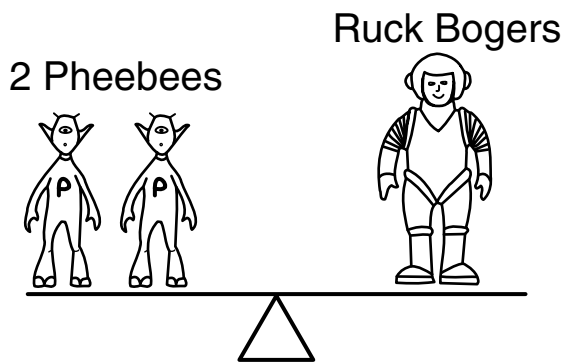
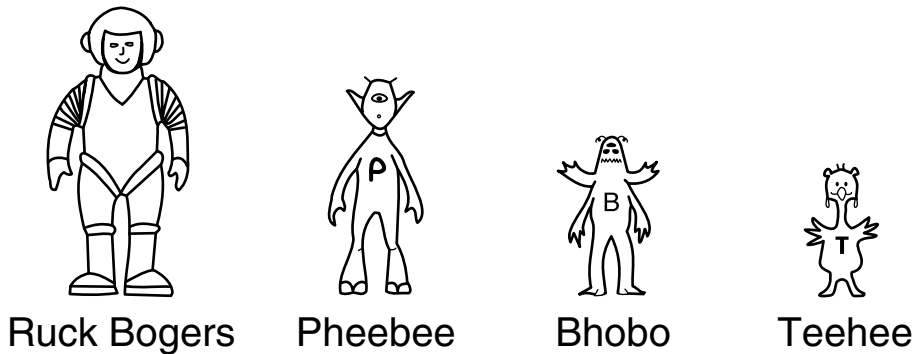


Plot the points below and then connect them in order. The first three points are done for you.

~~$(1, 5)$~~ , ~~$(0, 5)$~~ , ~~$(2, 3)$~~ , $(\hat{2}, \hat{2})$, $(2, 2)$, $(1, 3)$, $(0, 3)$, $(\hat{1}, 2)$, $(\hat{2}, 2)$,
 $(\hat{3}, 3)$, $(\hat{3}, 5)$, $(\hat{2}, 6)$, $(1, 7)$, $(5, 7)$, $(4, 6)$, $(3, 3)$, $(3, \hat{1})$, $(5, \hat{3})$,
 $(3, \hat{5})$, $(3, \hat{7})$, $(4, \hat{8})$, $(\hat{1}, \hat{8})$, $(1, \hat{7})$, $(2, \hat{6})$, $(\frac{1}{2}, \hat{4}\frac{1}{2})$.



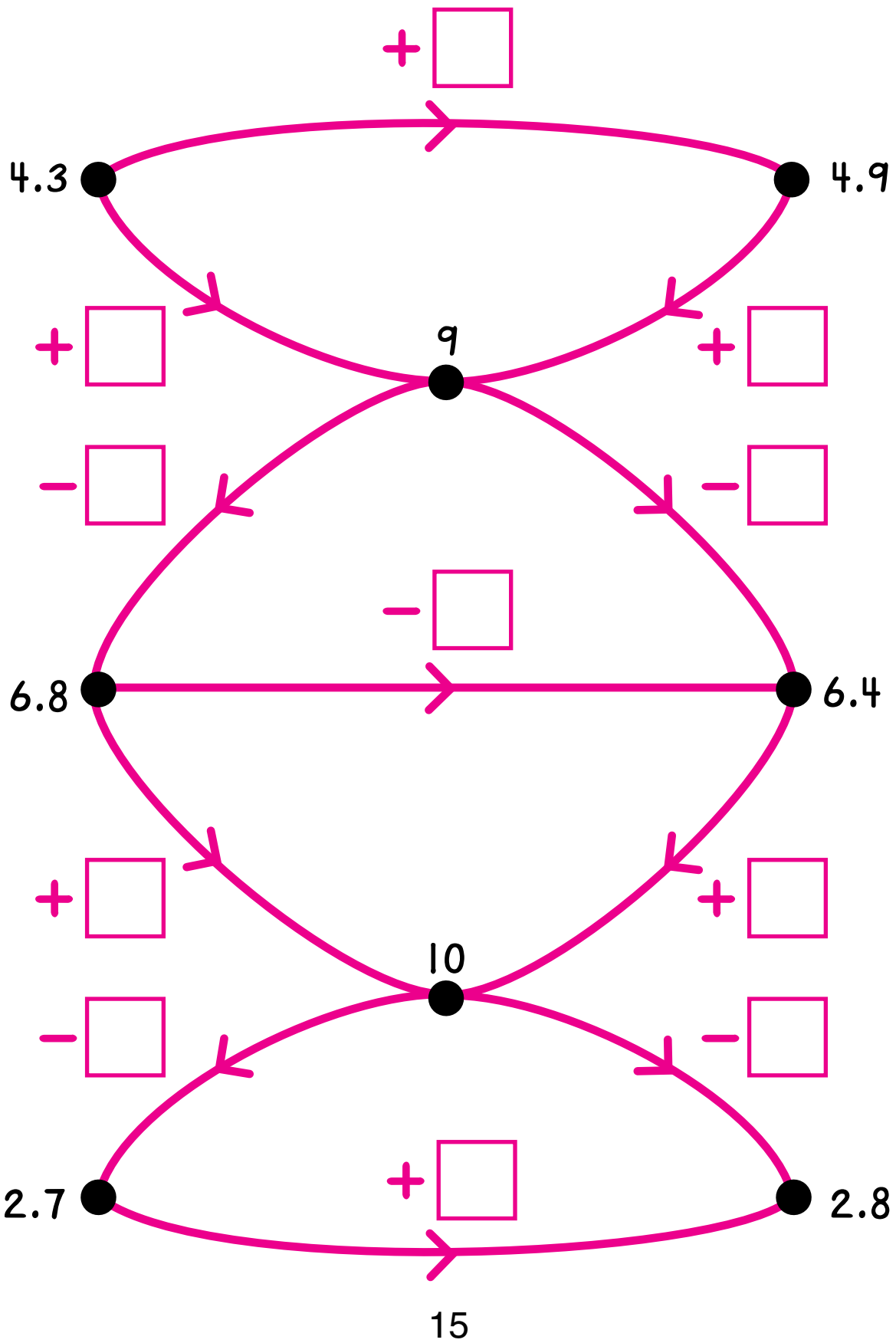
Ruck Bogers is a famous intergalactical explorer. On the planet of Ort, the people love to play on the teeter-totter. Ruck of course, not wanting to be rude, decides to play with them.



How many Teehees will it take to balance Ruck Bogers? _____

What combination of at least two kinds of creatures will it take to balance Ruck? _____

Fill in the boxes for the arrows.



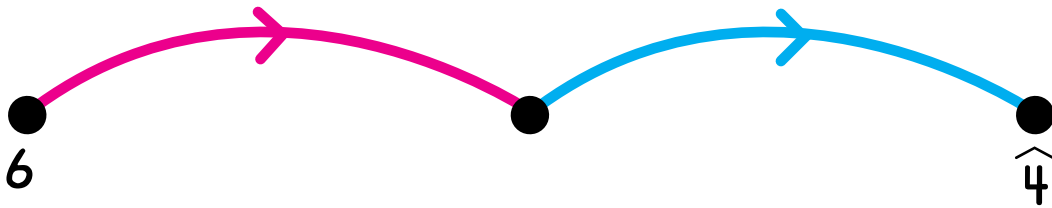
Put a one-digit number in each box to make the calculations correct.

$$\begin{array}{r} \square 7 \square \\ \times 5 \\ \hline 4 \square \square 5 \end{array}$$

$$\begin{array}{r} 6 \square 4 \\ \times 7 \square \\ \hline 5 \square \square 6 \\ \square \square 7 8 0 \\ \hline 5 1 \square 6 6 \end{array}$$

$$\begin{array}{r} 13\square 7 \quad R=4 \\ 5 \overline{) 678\square} \\ - 5000 \quad \square 000 \\ \hline 178\square \\ - \square \square 00 \quad 3\square\square \\ \hline 289 \\ - \square 50 \quad 50 \\ \hline 3\square \\ - 35 \quad \square \\ \hline \square \end{array}$$

Pair the tags.



$$-8$$

$$+6$$

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

$$-3.5$$

$$-16$$

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

$$-5.5$$

$$2 \times$$

$$-14$$

$$-4.5$$

$$-6.5$$

$$-6$$

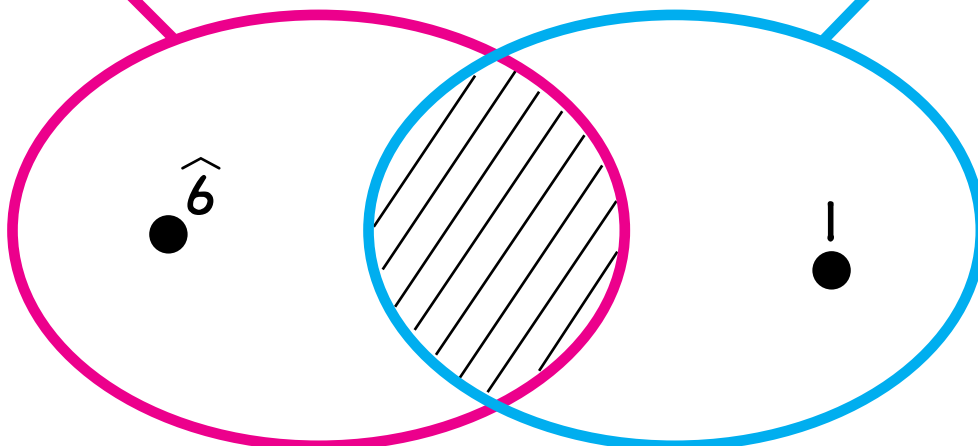
The red label is one of these:

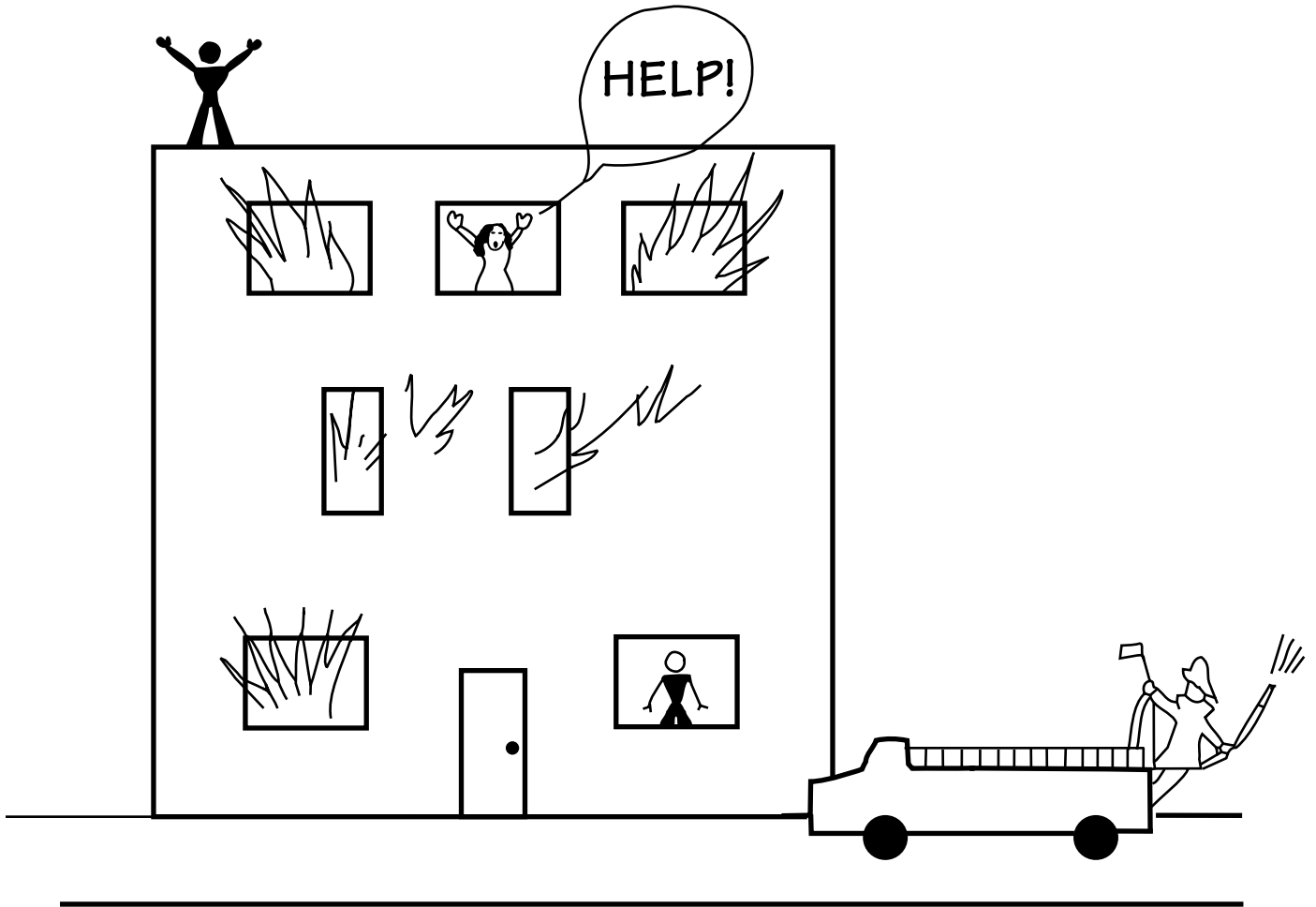
The blue label is one of these:

- Multiples of 2
- Multiples of 3
- Multiples of 4
- Positive divisors of 12
- Positive divisors of 18
- Positive divisors of 20
- Positive divisors of 24

- Multiples of 2
- Multiples of 3
- Multiples of 4
- Positive divisors of 12
- Positive divisors of 18
- Positive divisors of 20
- Positive divisors of 24

Label the strings.



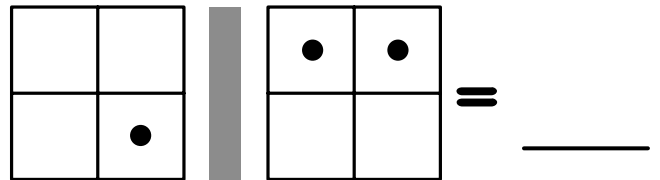
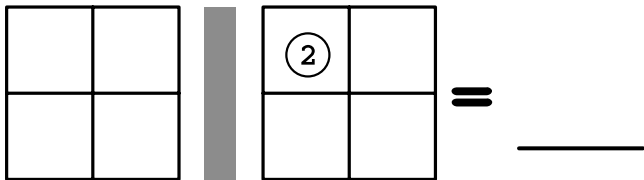
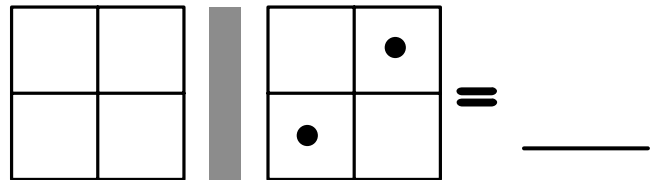
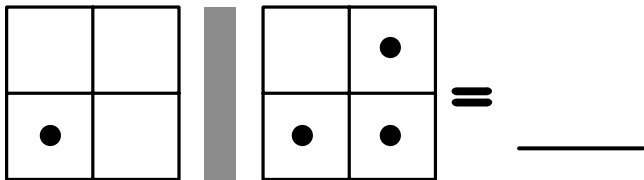


When these people jump from the building to escape the fire, they will fall along a path perpendicular to the street. Use your compass to show where the firemen should put their nets to catch the falling people. Mark each spot with a blue dot.

Rio is a secret number.

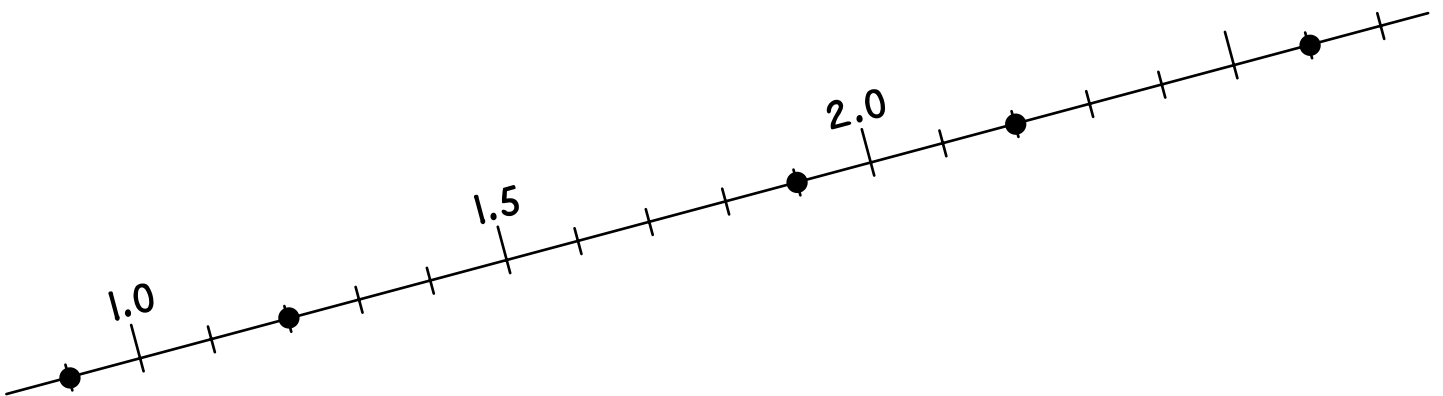
Clue 1

Rio is one of these numbers.



Clue 2

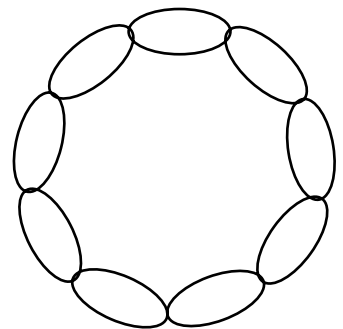
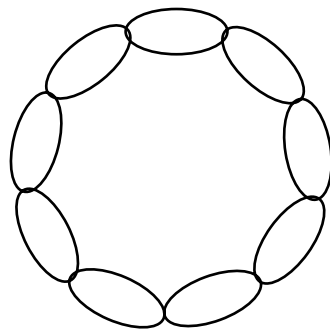
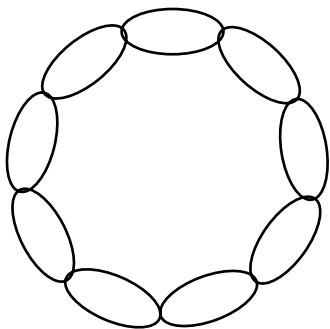
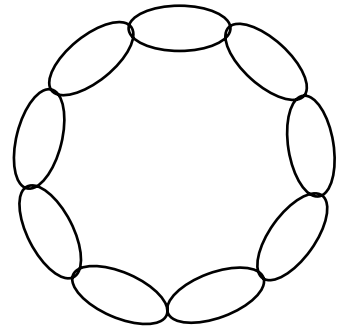
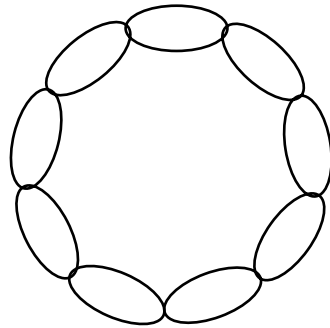
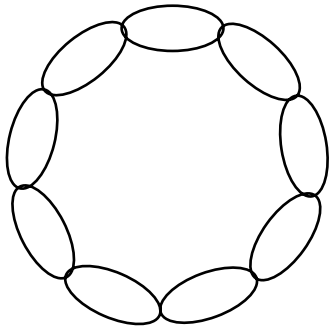
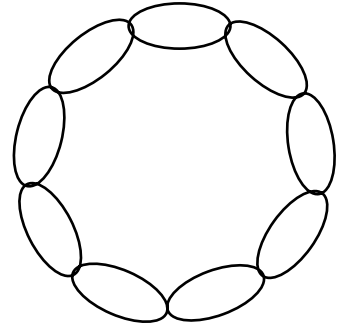
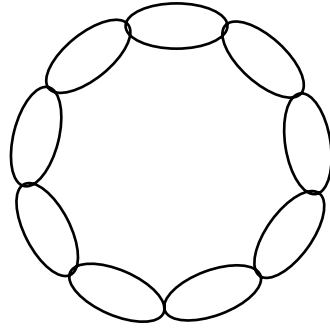
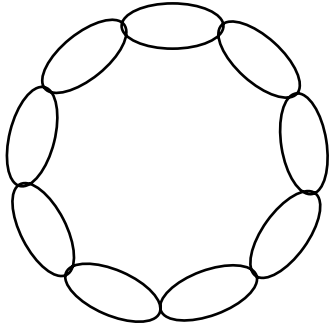
Rio is one of these dots. Label the dots.



Who is Rio? _____

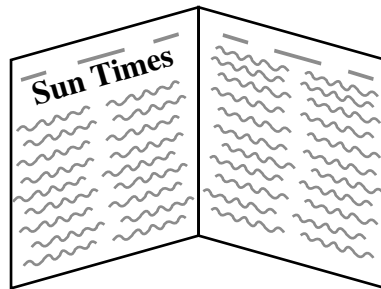
Show all of the different necklaces with six white and three red beads.

You may not need to use all of the necklaces drawn.





What is the maximum number of 32¢ stamps you can buy for \$10.00? Explain your answer.

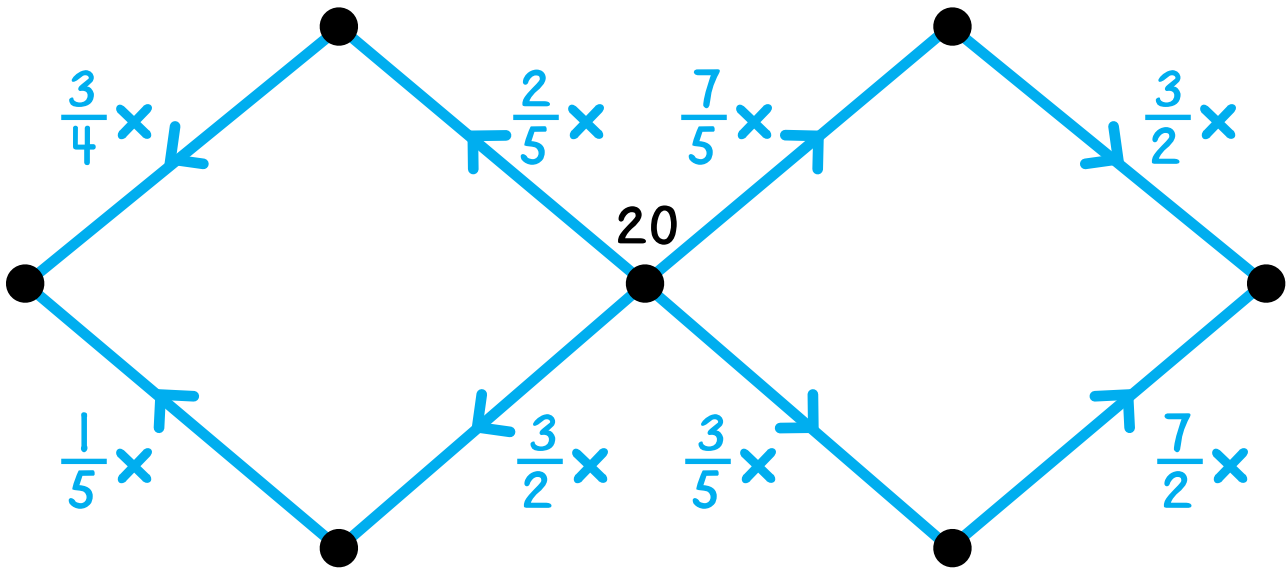


A local newspaper costs 25¢ a day except Sunday, and the Sunday paper cost \$1.50. A subscription costs \$35.00 quarterly (for one-fourth of a year). Does a subscription save money? Explain your answer. **Yes**

Taha is a secret number.

Clue 1

Taha is in this arrow picture.



Clue 2

Taha is one of these numbers.

\square : Greatest common divisor

$$12 \square 28 = \underline{\hspace{2cm}}$$

$$10 \square 21 = \underline{\hspace{2cm}}$$

\sqcup : Least common multiple

$$15 \sqcup 6 = \underline{\hspace{2cm}}$$

$$10 \sqcup 8 = \underline{\hspace{2cm}}$$

Who is Taha?

Locate these numbers in the string picture. One is done for you.

6×7

13×5

12×18

13×7

13×20

12×15

18×7

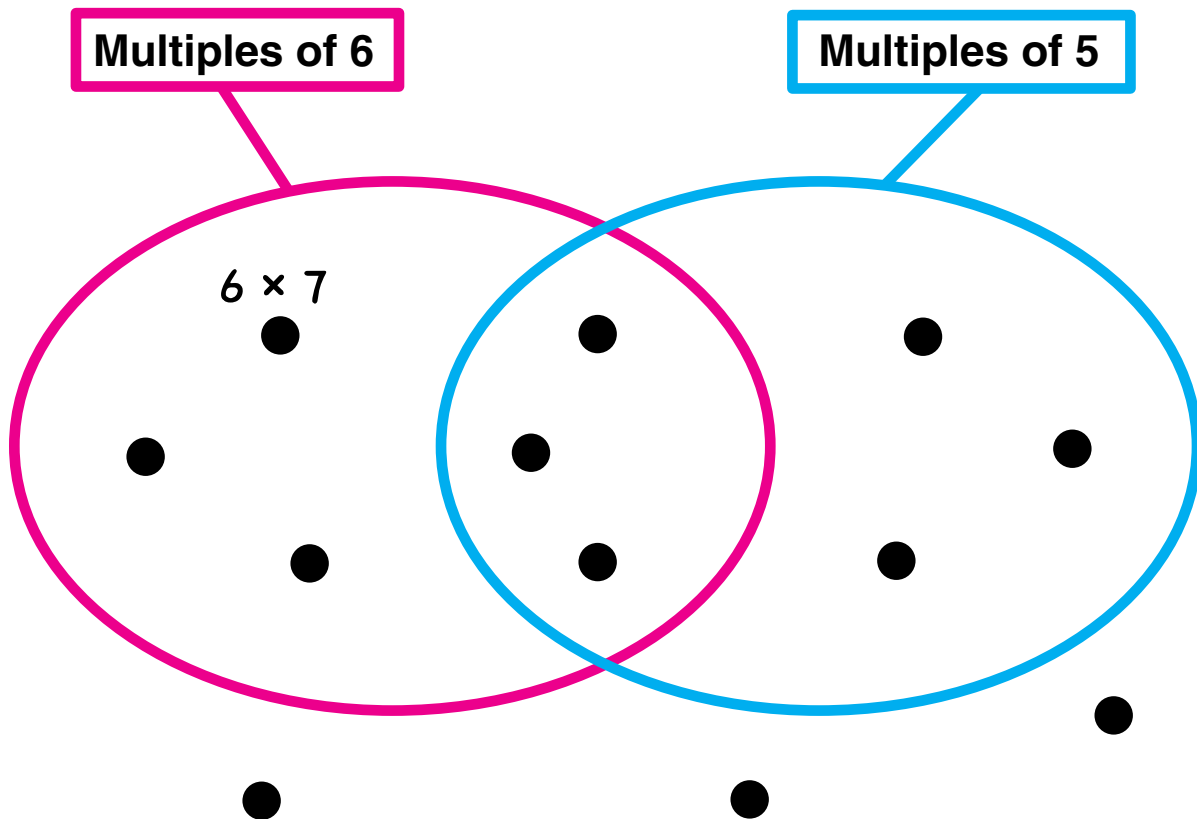
13×17

11×15

30×7

13×30

11×17





Using a ruler, find the distance on the map above from

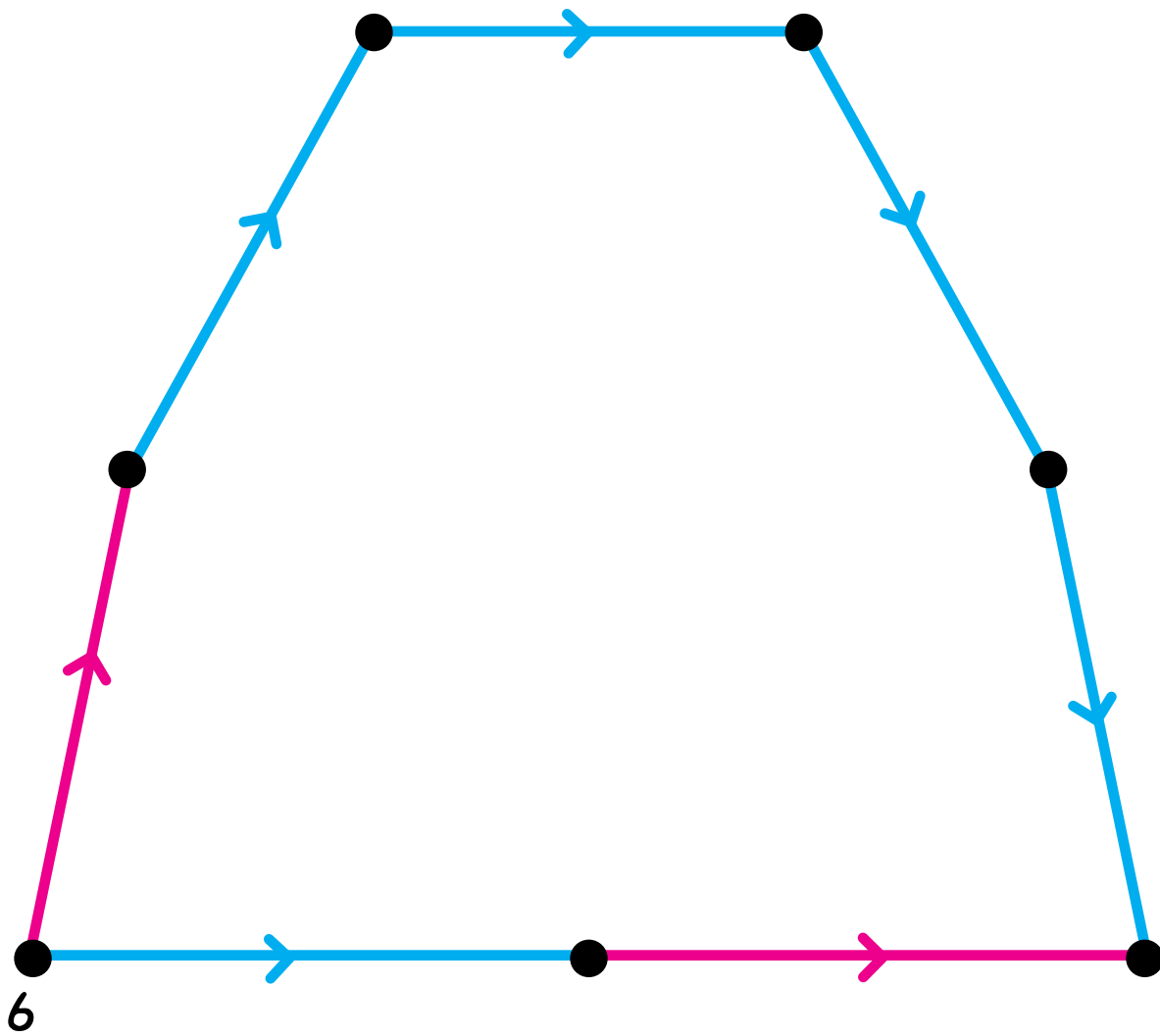
- 1) Los Angeles to Chicago _____ cm
- 2) St. Louis to New York _____ cm
- 3) Chicago to Miami _____ cm

If 1 cm = 350 km, what is the actual distance for each of the above?

- 1) _____
- 2) _____
- 3) _____

If a plane averages 800 km per hour, about how long would the flying time be from Los Angeles to Chicago to Miami? _____

Label the dots and fill in the box for the red arrows.



+7

×

Put a single digit in each box so that these numbers are all multiples of 9.

$5 \square 4,302$

$2,37 \square ,428$

$87 \square ,769$

$42,307,8 \square 8$

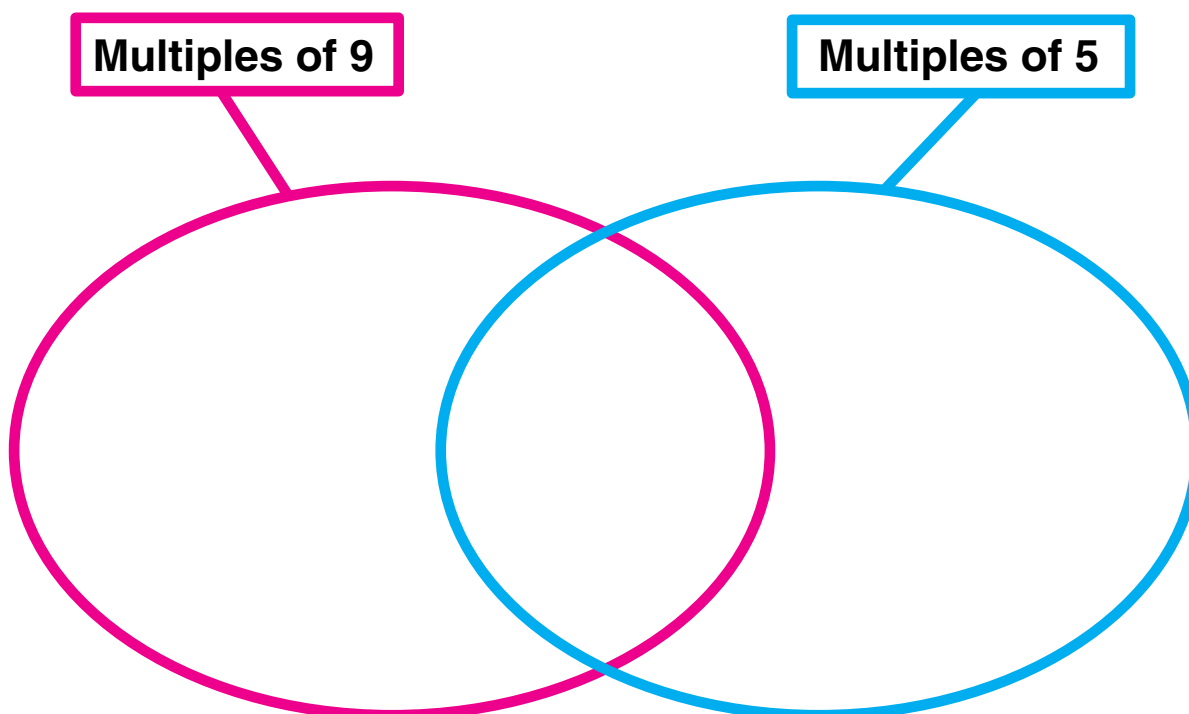
Put each of these numbers in the string picture.

123,456,789

777,222,000

7,777,777

303,303 × 567,765



Mu is a secret number.

Clue 1

Mu can be written by adding two pairs of parentheses to this expression.

$$8 \times 7 - 4 + 6$$

Mu could be _____, _____, _____, _____, or _____.

Clue 2

Mu is one of these numbers.

\square : Greatest common divisor

\sqcup : Least common multiple

$20 \square 12 = \underline{\hspace{2cm}}$

$6 \sqcup 10 = \underline{\hspace{2cm}}$

$30 \square 42 = \underline{\hspace{2cm}}$

$12 \sqcup 4 = \underline{\hspace{2cm}}$

$12 \square 35 = \underline{\hspace{2cm}}$

$5 \sqcup 8 = \underline{\hspace{2cm}}$

Who is Mu? _____

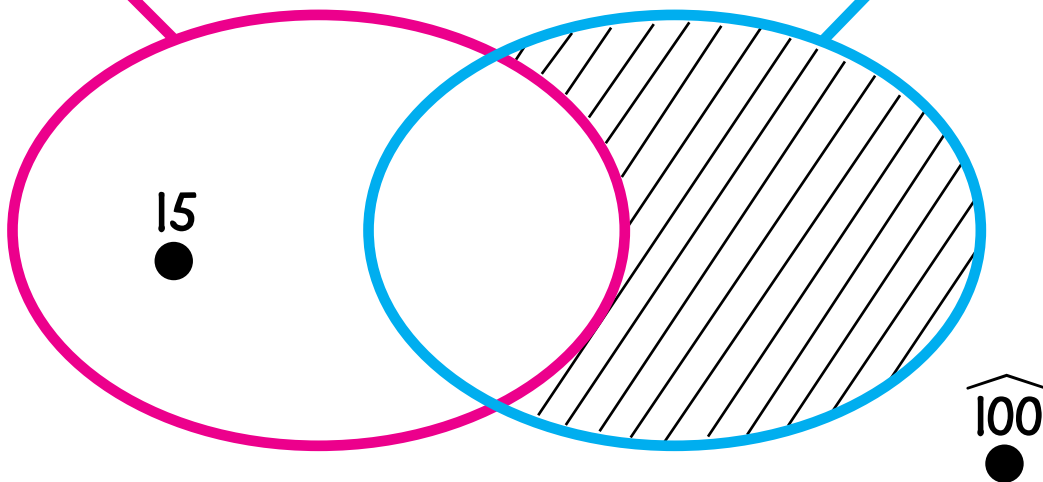
The red label is one of these:

- Multiples of 2
- Multiples of 3
- Multiples of 4
- Multiples of 5
- Less than 20
- Greater than $\widehat{10}$
- Positive divisors of 24

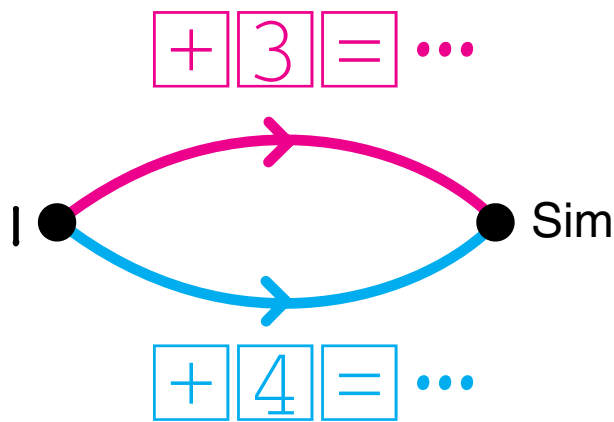
The blue label is one of these:

- Multiples of 2
- Multiples of 3
- Multiples of 4
- Multiples of 5
- Less than 20
- Greater than $\widehat{10}$
- Positive divisors of 24

Label the strings.

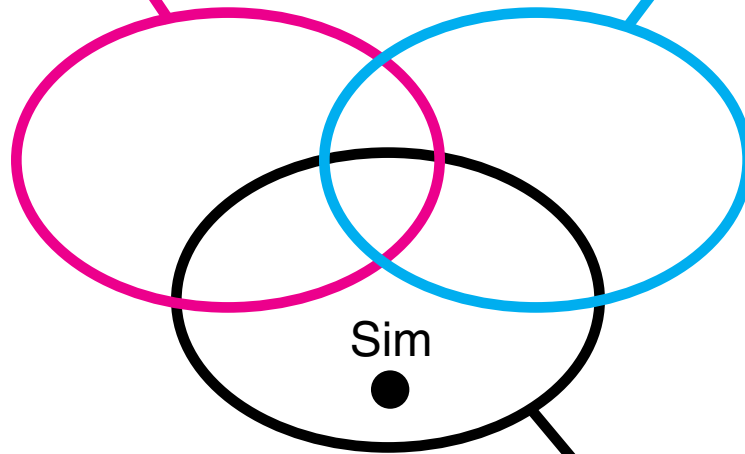


Sim is a secret number.



Positive prime numbers

Multiples of 5



Less than 80

Who is Sim? _____

Pom is a secret number.

Clue 1

$$Pom \sqcup 10 = 30$$

Pom could be _____, _____, _____, or _____.

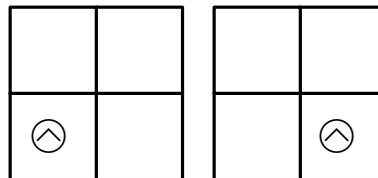
Clue 2

$$Pom \sqcap 18 = 3$$

Pom could be _____ or _____.

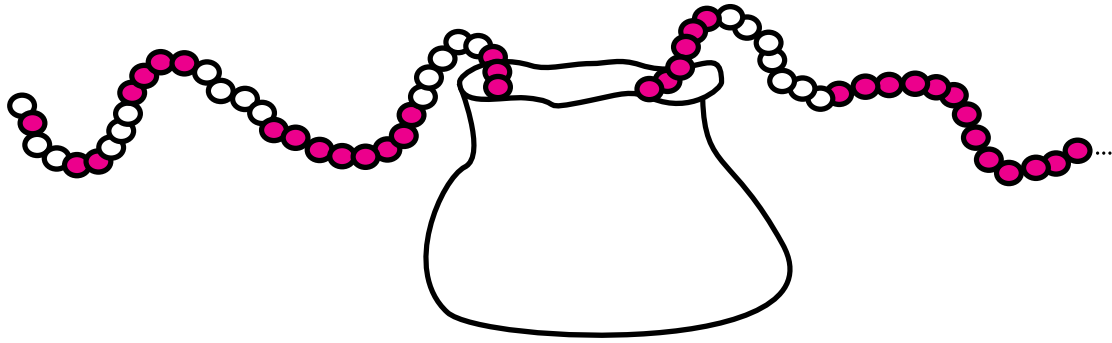
Clue 2

Pom can be put on this Minicomputer by adding exactly one of these checkers:



Who is Pom? _____

Red and white beads are strung with a pattern.

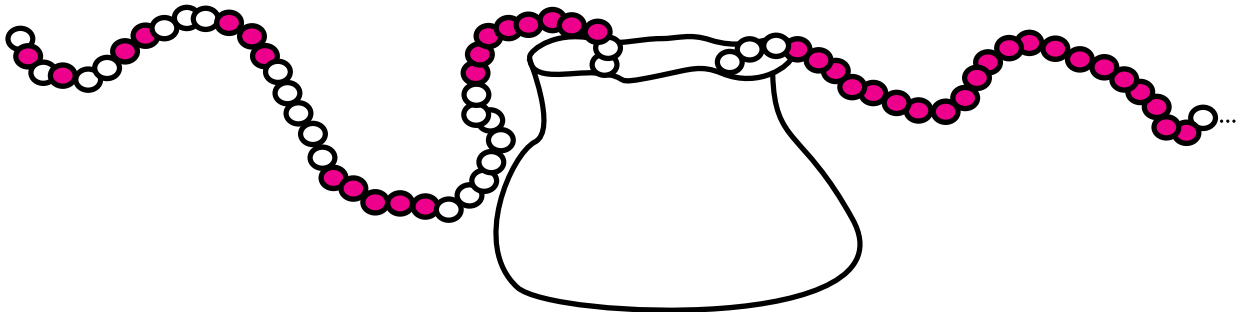


How many total beads are hidden in the bag? _____

How many red beads are in the bag? _____

How many white beads are in the bag? _____

Red and white beads are strung with a different pattern.



How many total beads are hidden in the bag? _____

How many red beads are in the bag? _____

How many white beads are in the bag? _____