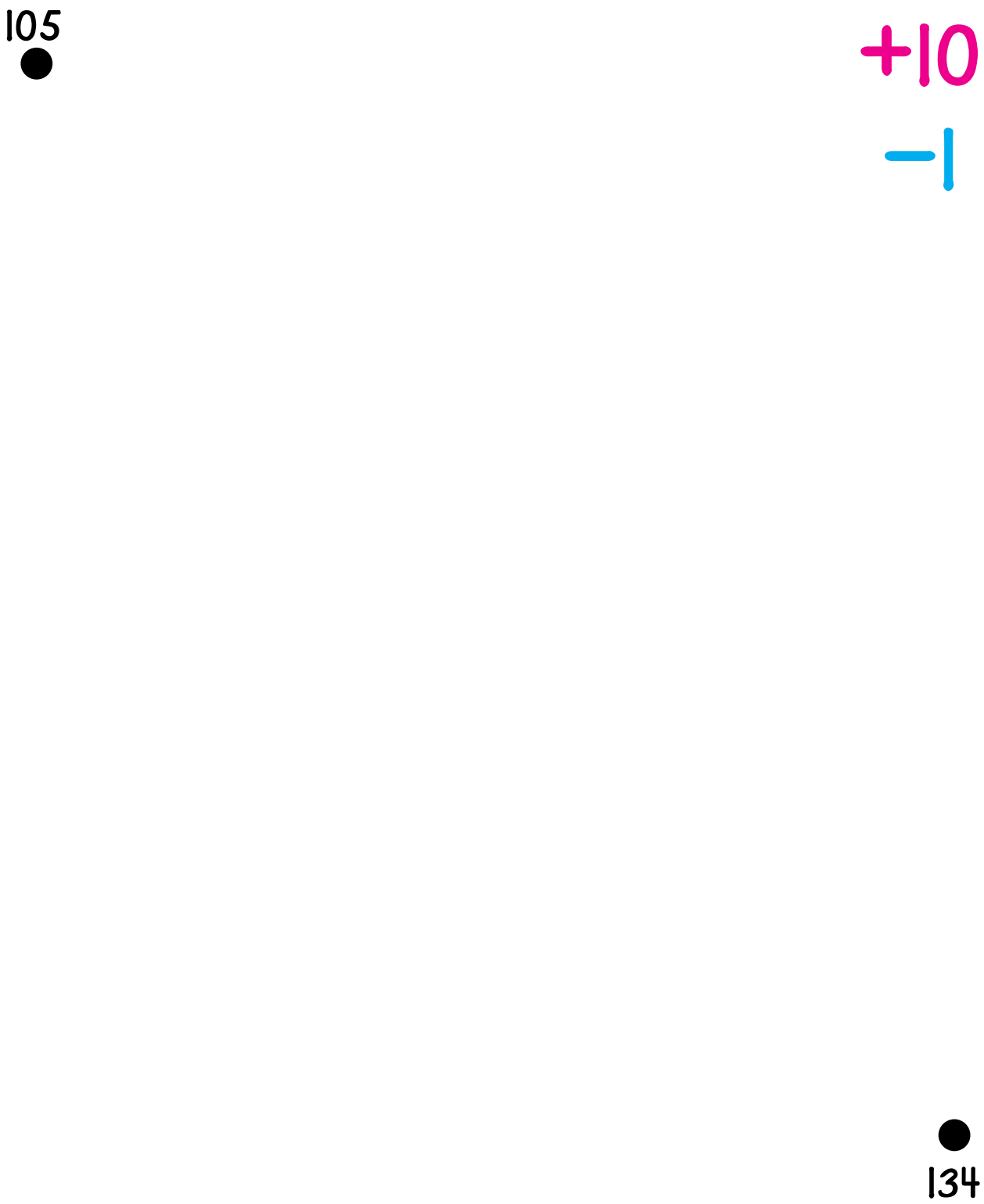
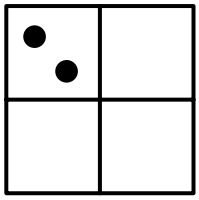
Galaxy of Problems #4

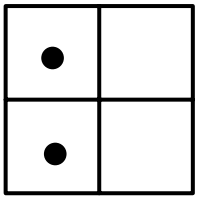
Build an arrow road from 105 to 134 using +10 and –1 arrows.
Use less than five arrows in your road.

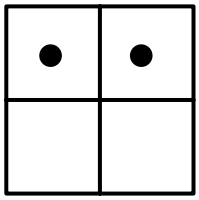


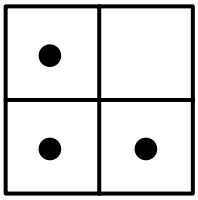
Ping is a secret number.

Ping is one of these numbers.

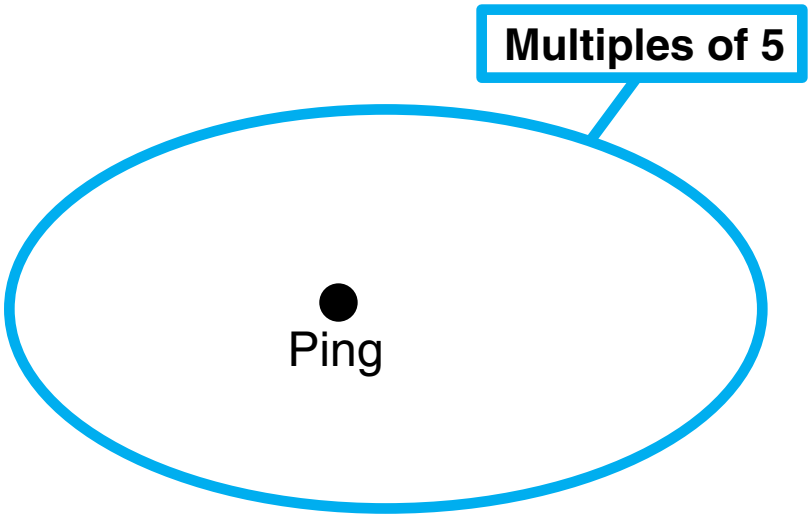
 = _____

 = _____

 = _____

 = _____

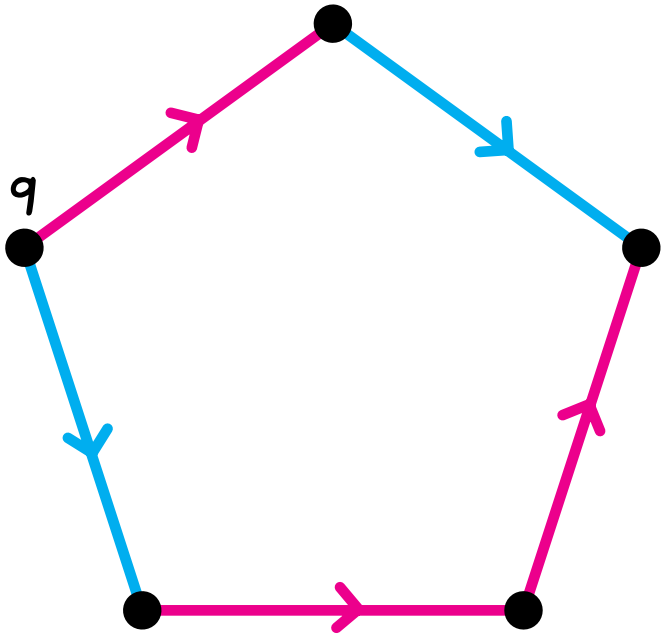
Ping is in this string picture.

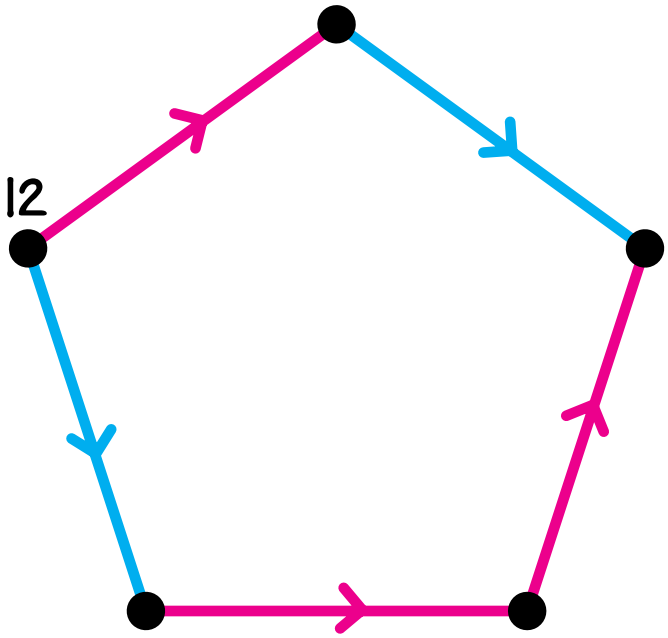


Who is Ping? _____

Label the dots.

2×
+3

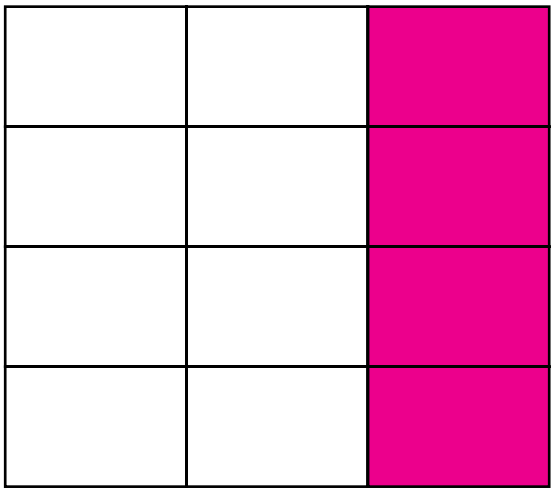




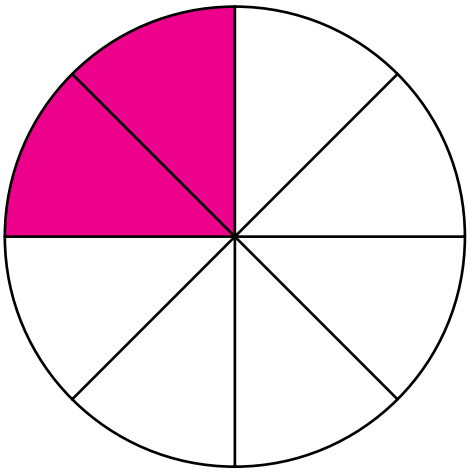
Complete this subtraction table.

−	3	5	9
10			
20			
30			
40			
50			

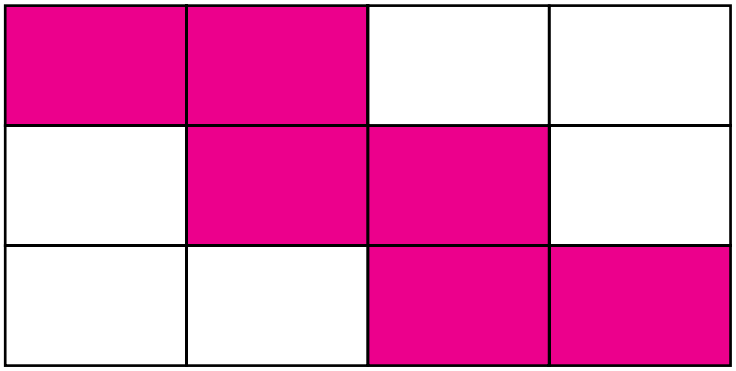
What fractional part of each shape is colored red?



_____

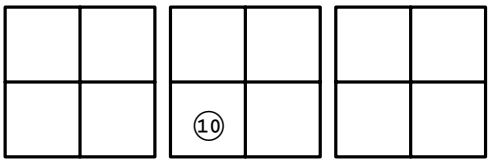


_____



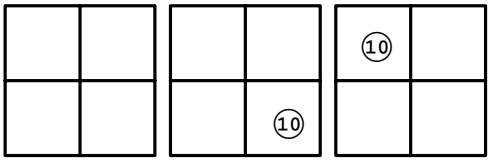
_____

Complete.



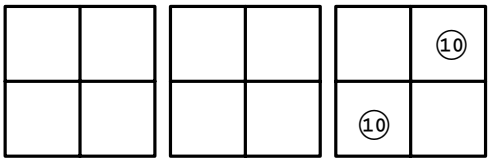
= ____

10 × 20 = ____



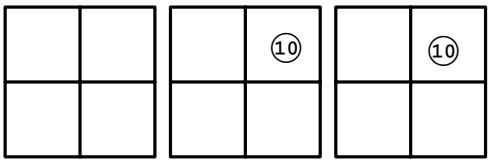
= ____

10 × 18 = ____



= ____

10 × 6 = ____



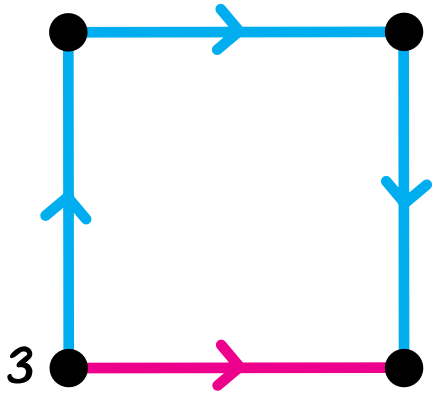
= ____

10 × 44 = ____

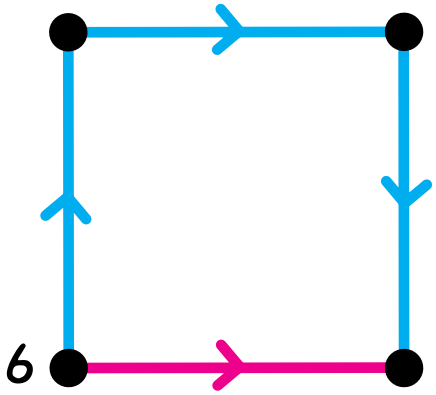
15 × 10	22 × 10	43 × 10	61 × 10	79 × 10

Label the dots and complete the number sentences.

2×

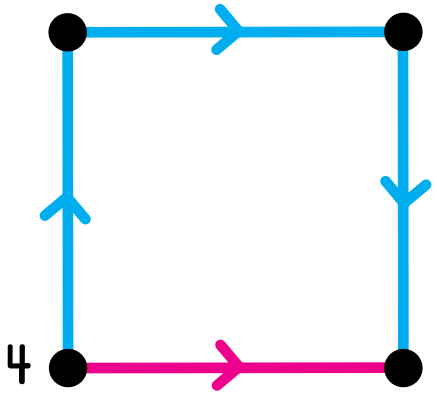


8 × 3 = _____

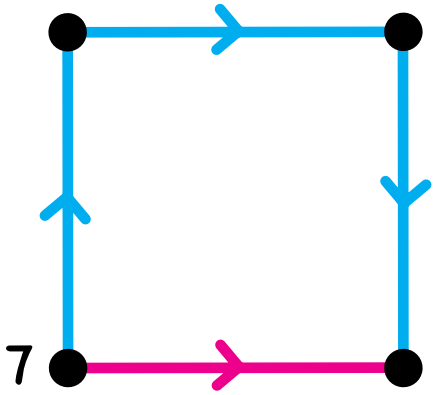


8 × 6 = _____

8×



8 × 4 = _____



8 × 7 = _____

Complete these number sentences.

$2 \times (7 + 1) =$ _____

$(2 \times 7) + 1 =$ _____

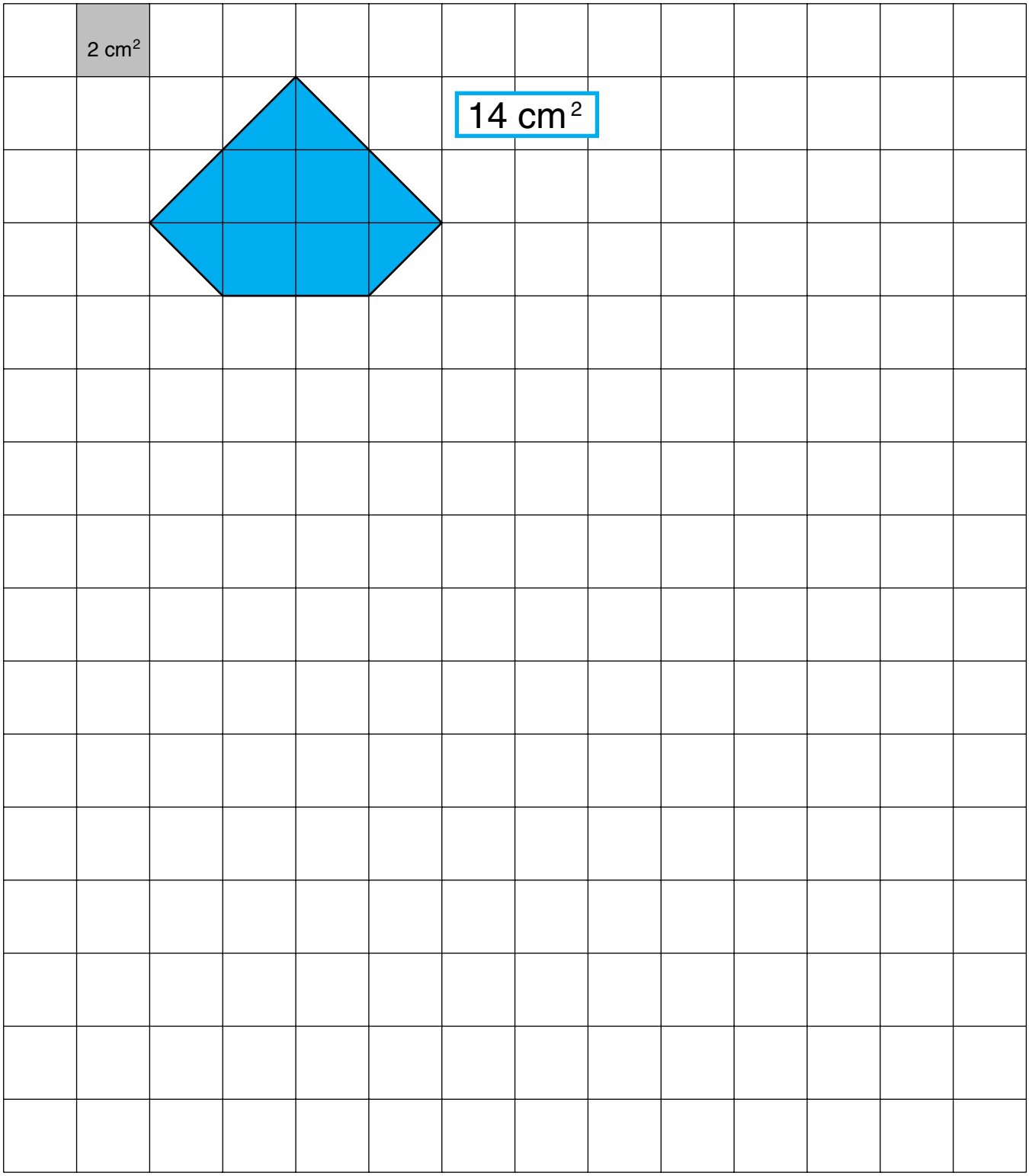
$2 + (7 \times 1) =$ _____

$(2 + 7) \times 1 =$ _____

$(2 \times 1) + 7 =$ _____

$(2 + 1) \times 7 =$ _____

The blue shape has area 14 cm^2.
Color four more shapes with area 14 cm^2.

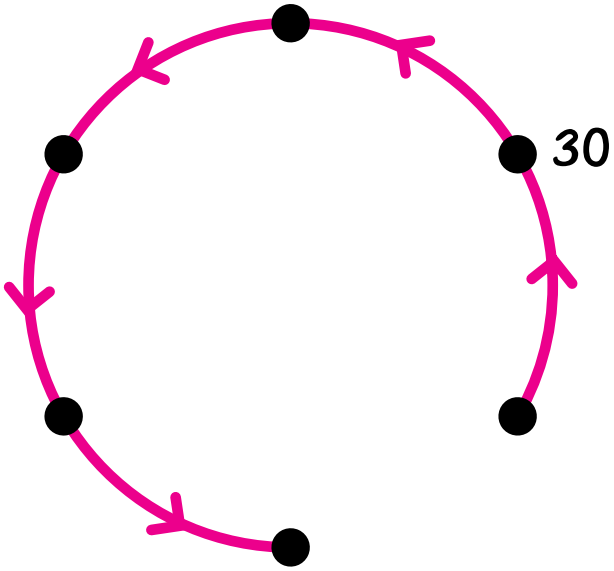


Build an arrow road from 3 to 42 using 10x and +1 arrows.
Use less than five arrows in your road.

10×

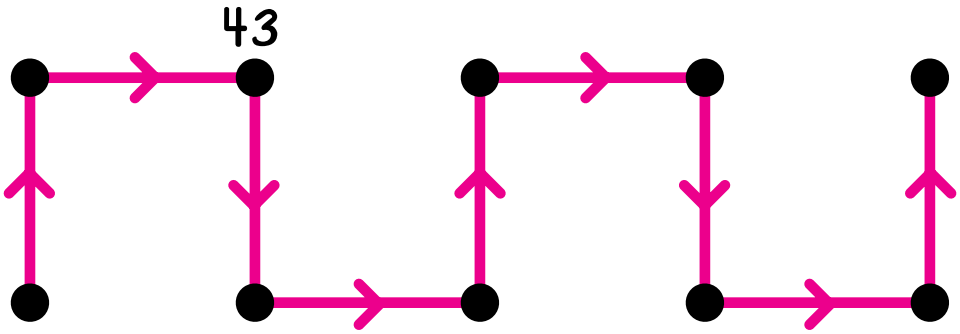
+1

Label the dots. Draw all the missing –10 arrows.



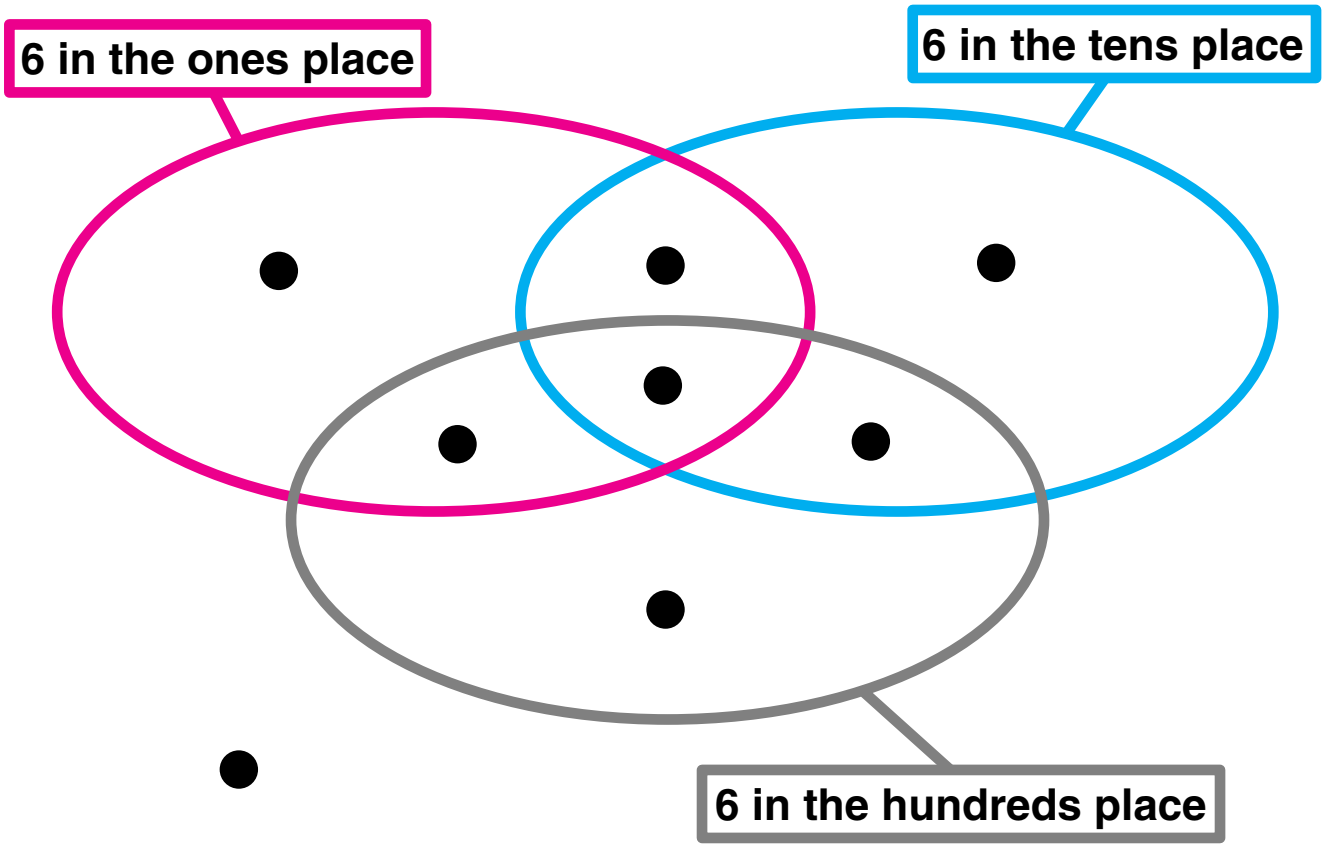
–5

–10

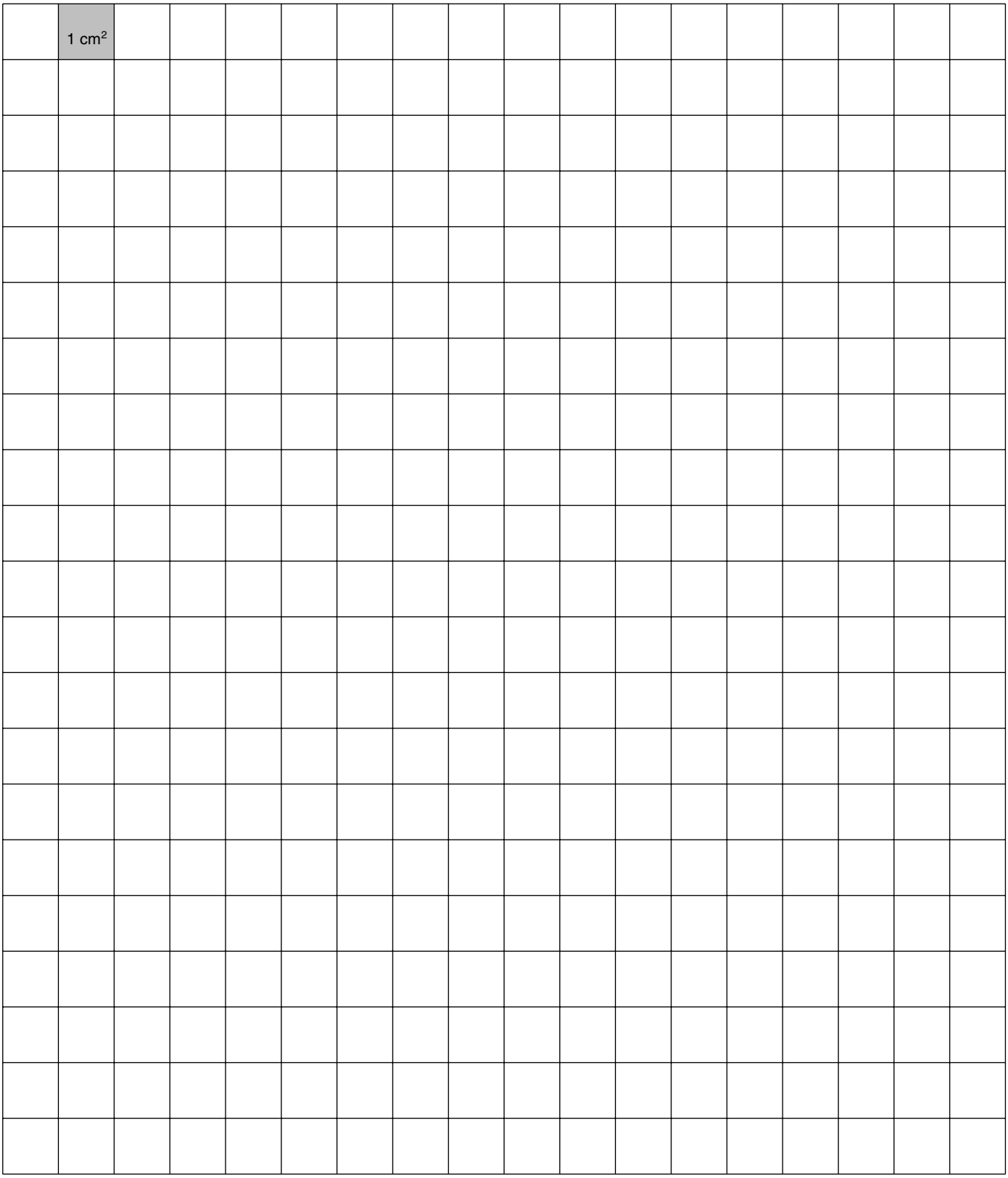


You should find twelve –10 arrows.

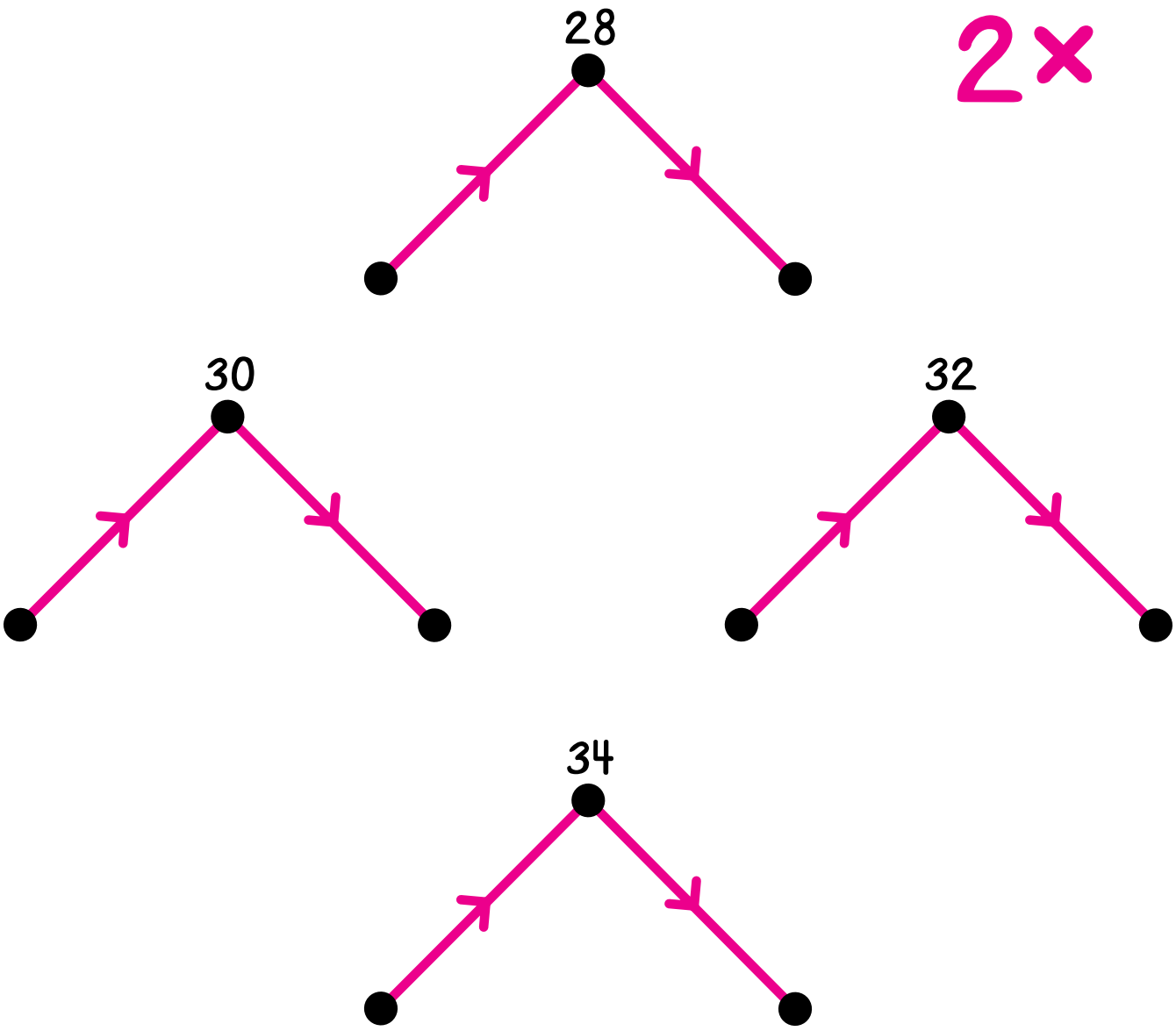
Label the dots with whole numbers.
Many solutions are possible.



Color several rectangles that have area 16 cm^2. Try to find three or more different rectangles.



Label the dots.

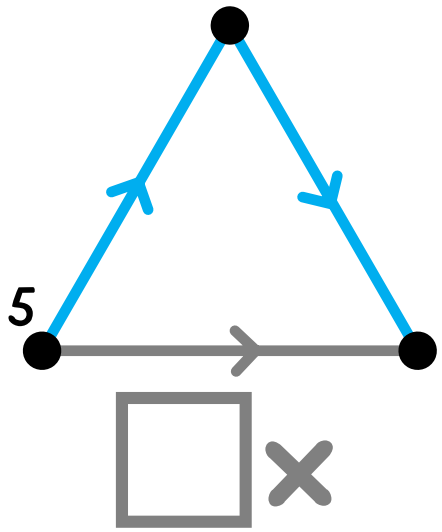


2 × 15 = _____ 2 × 17 = _____ 2 × 19 = _____

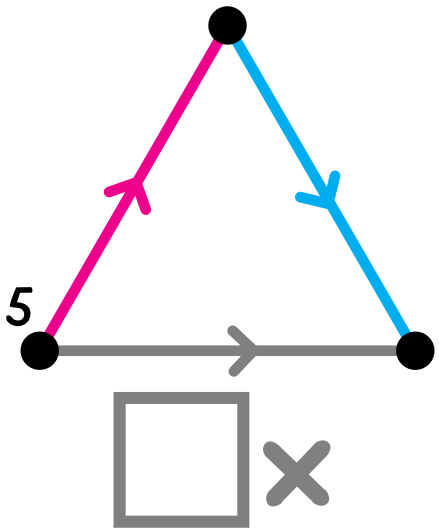
28 ÷ 2 = _____ 32 ÷ 2 = _____ 38 ÷ 2 = _____

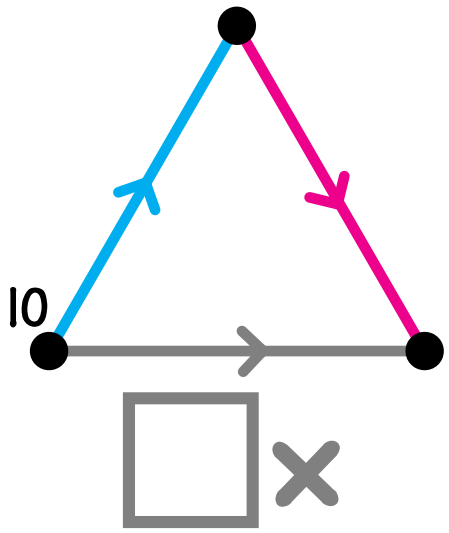
Label the dots. Fill in the box for each gray arrow.

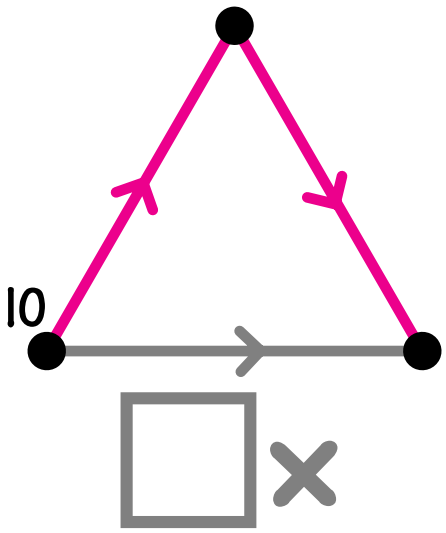
2×



3×



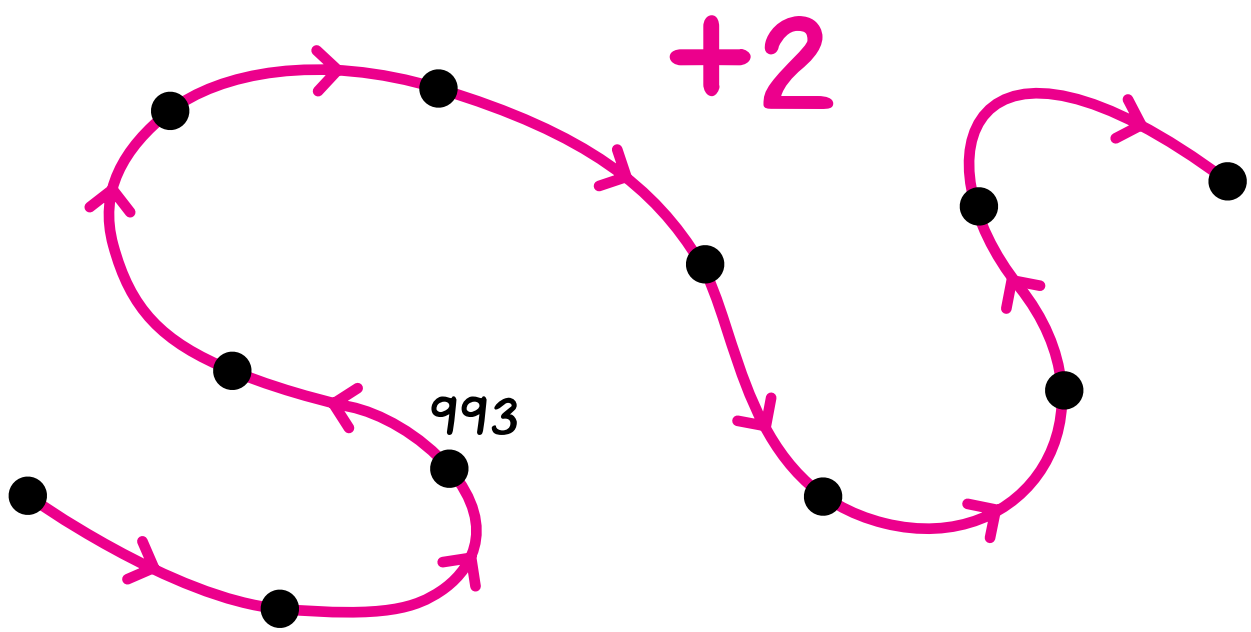




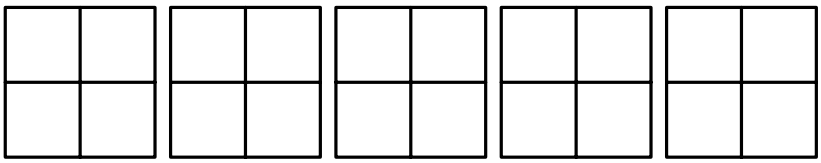
Complete.

$\begin{array}{r} 20 \\ -\ 18 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ -\ 18 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ -\ 18 \\ \hline \end{array}$
$\begin{array}{r} 45 \\ -\ 15 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ -\ 17 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ -\ 19 \\ \hline \end{array}$
$\begin{array}{r} 31 \\ -\ 14 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ -\ 29 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ -\ 32 \\ \hline \end{array}$

Pang is a secret number.
Pang is in this arrow picture.



Pang can be put on this Minicomputer using exactly one regular checker and one negative checker.

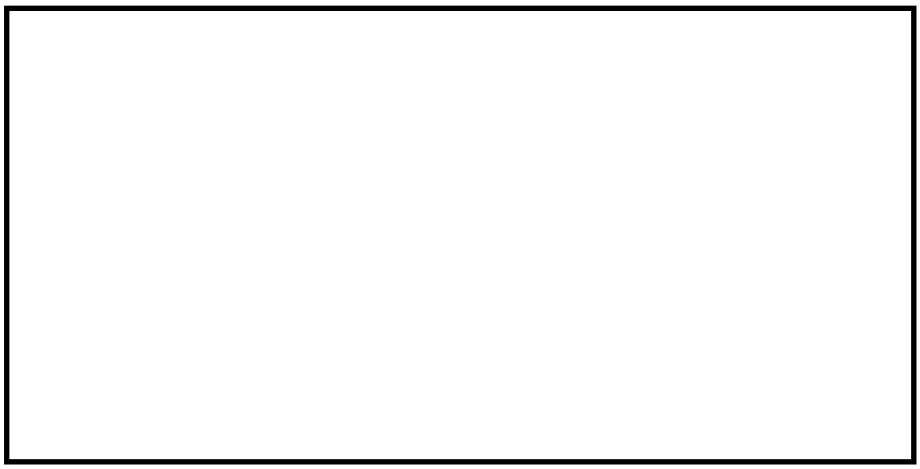


Who is Pang? _____

Put Pang on the Minicomputer.

Divide this rectangle and color one-half ($\frac{1}{2}$).

Divide this rectangle and color three-fourths ($\frac{3}{4}$).



Divide this rectangle and color two-thirds ($\frac{2}{3}$).

Share 105 marbles fairly among Nick, Cathy, and Jule.

For Nick	For Cathy	For Jule

Write a number sentence about this sharing.

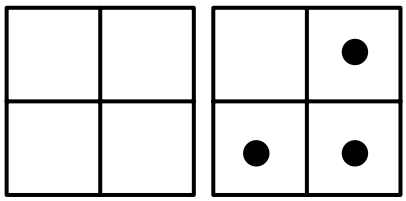
Share 152 marbles fairly among Kyle, Mae, Chas, and Liana.

For Kyle	For Mae	For Chas	For Liana

Write a number sentence about this sharing.

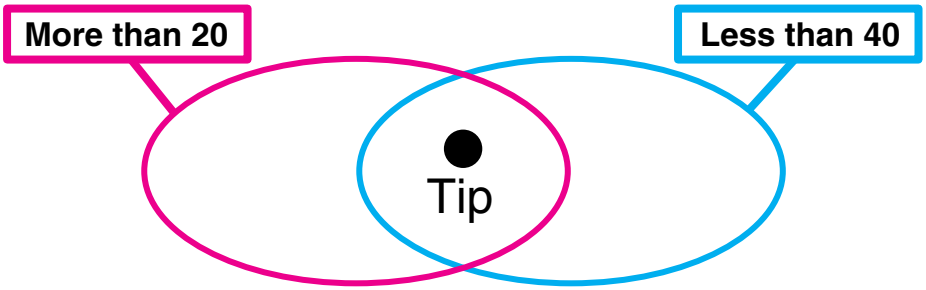
Tip is a secret number.

Clue 1 Tip can be put on this Minicomputer by moving one of these checkers to the tens board.



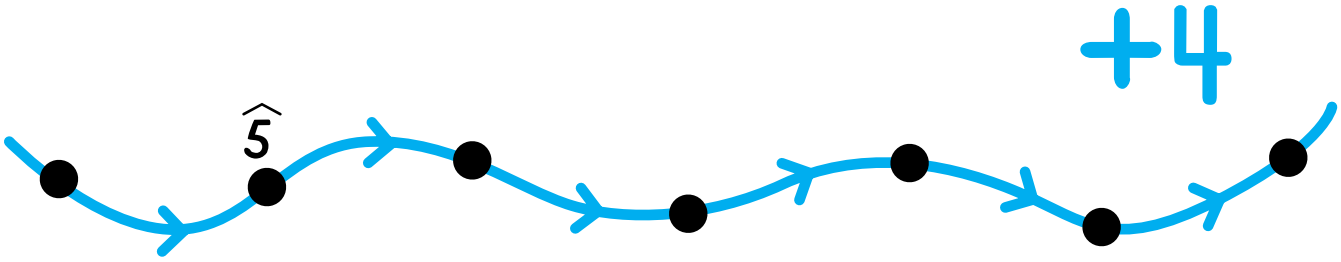
Which numbers could Tip be? _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, or _____.

Clue 2



Tip could be _____, _____, or _____.

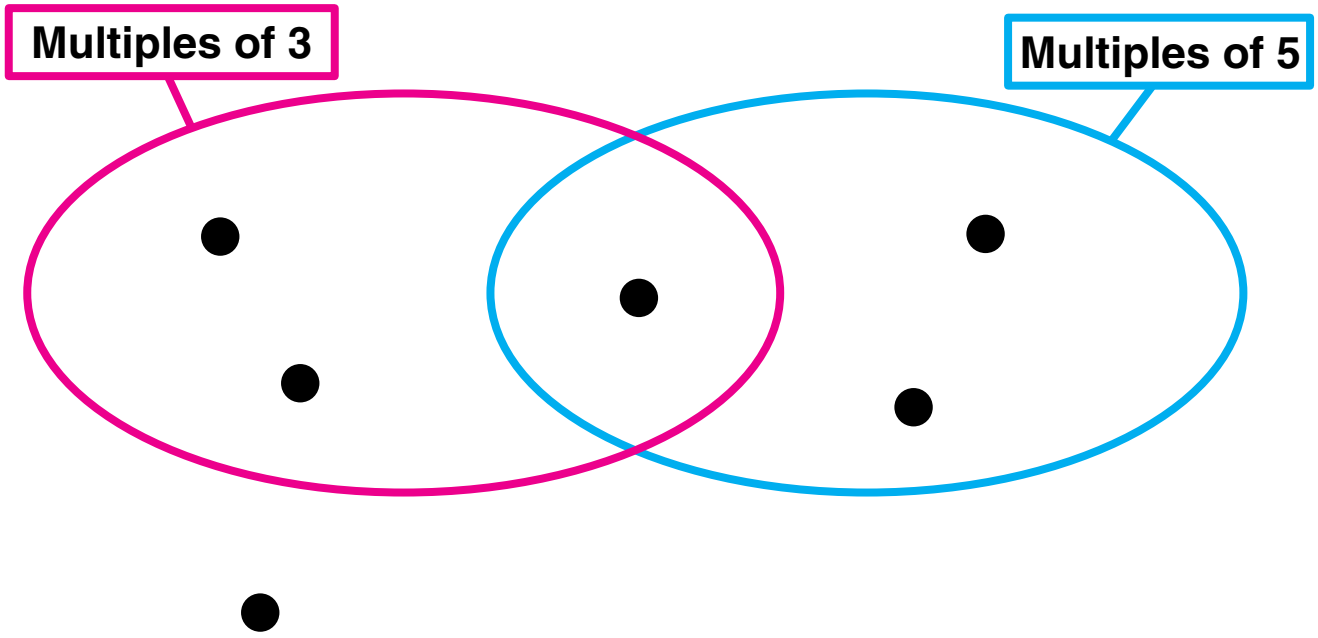
Clue 3 Tip is on the same +4 arrow road as $\hat{5}$.



Who is Tip? _____

Label the dots in this picture with these numbers:

3×7	7×11	995
5×13	3×25	$33 + 9$



School Carnival

Tickets cost 15¢ each

Booths

Face Painting — 6 tickets
Fortune Telling — 5 tickets
Ride the Pony — 6 tickets
Grab Bag — 4 tickets

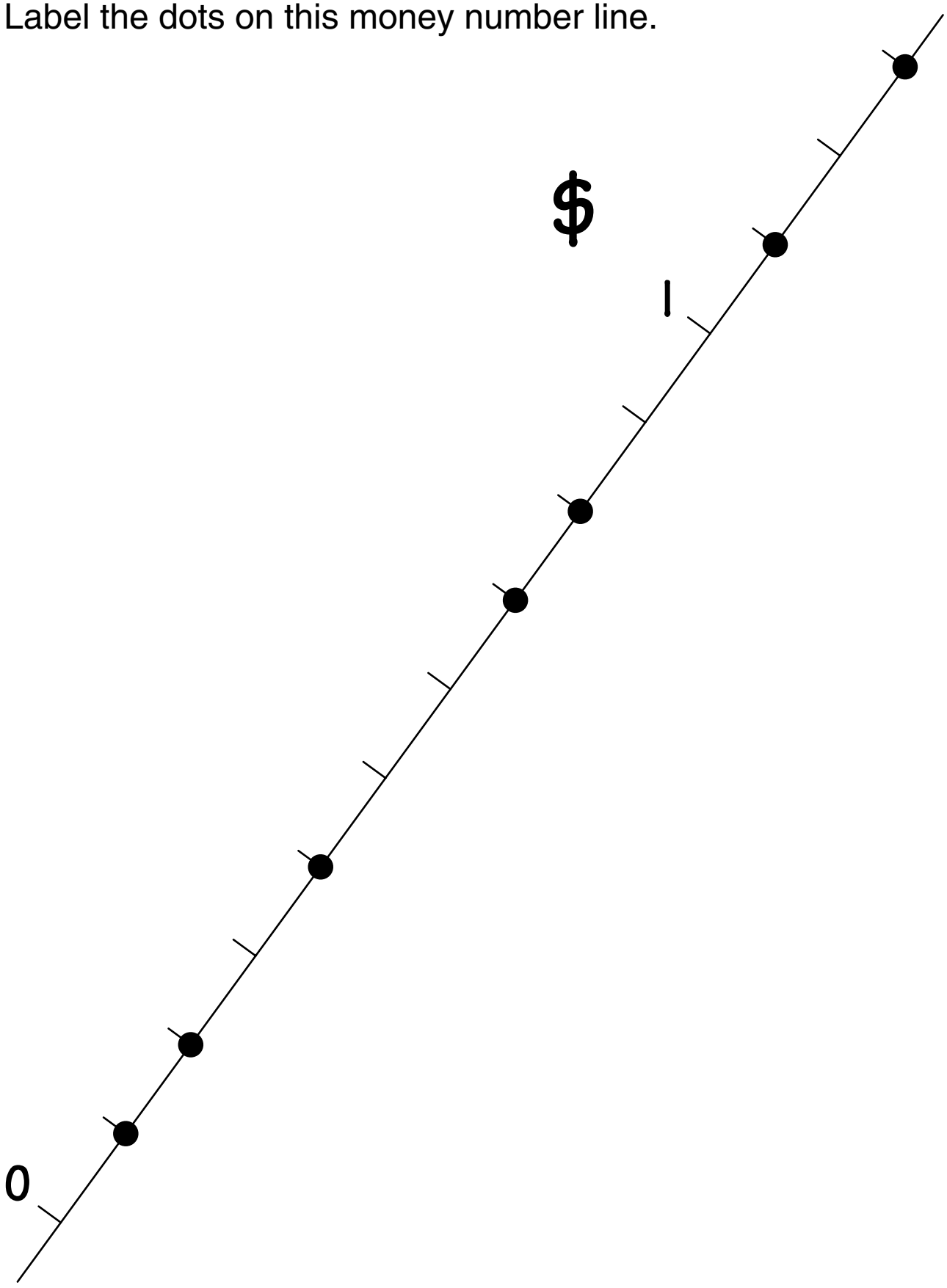
Food

Hotdog — 6 tickets
Drink — 4 tickets
Cookie — 2 tickets
Chips — 3 tickets

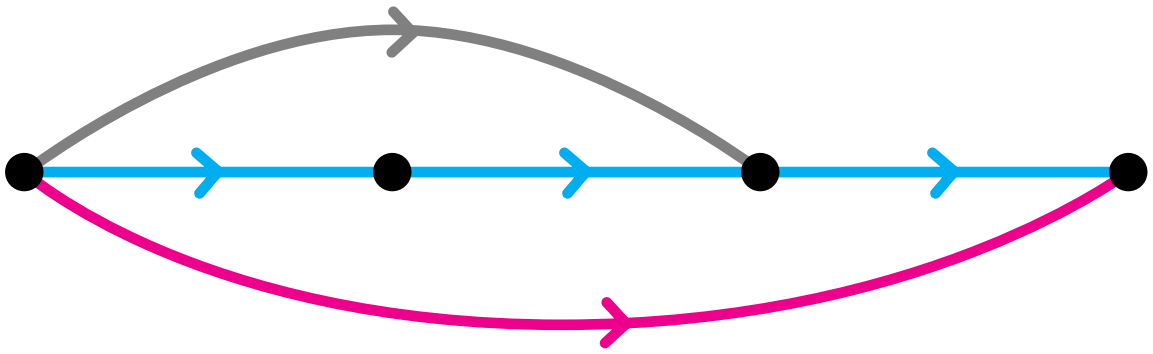
Frankie goes to the carnival with $3.00. How many tickets can he buy? _____

Frankie wants to use all his tickets. He decides to use half of his tickets on booths and half on food. What booths could he go to? What food could he get?

Label the dots on this money number line.



2× 4× 8×



Complete this table.

Starting Number	2×	4×	8×
12			
16			
25			
50			
61			

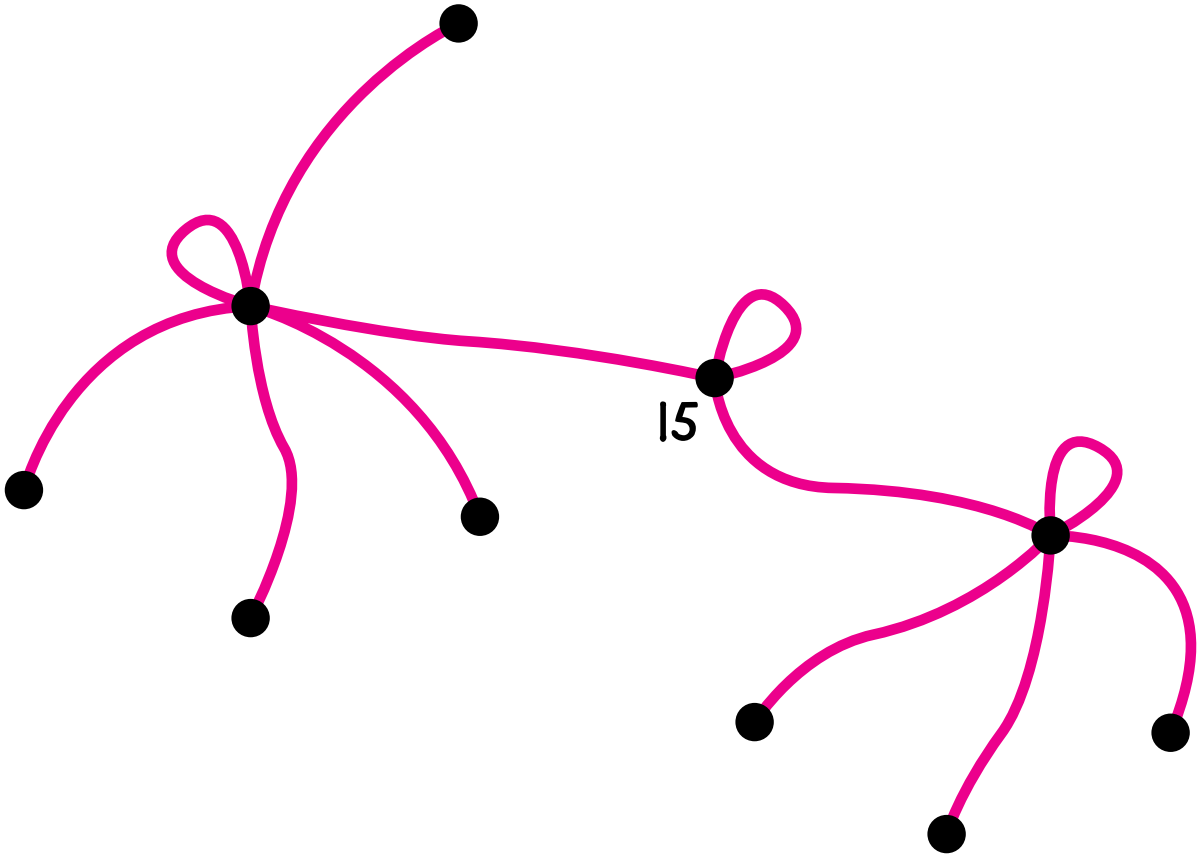
Complete.

$$\begin{array}{r} 154 \\ +\quad\ \ \\ \hline 659 \end{array} \qquad \begin{array}{r} 39 \\ +\quad\ \ \\ \hline 91 \end{array}$$

$$\begin{array}{r} 408 \\ +\quad\ \ \\ \hline 765 \end{array} \qquad \begin{array}{r} 273 \\ +\quad\ \ \\ \hline 400 \end{array}$$

Label the dots. Many solutions are possible.

Two numbers may talk to each other
if and only if
one number is a multiple of the other.

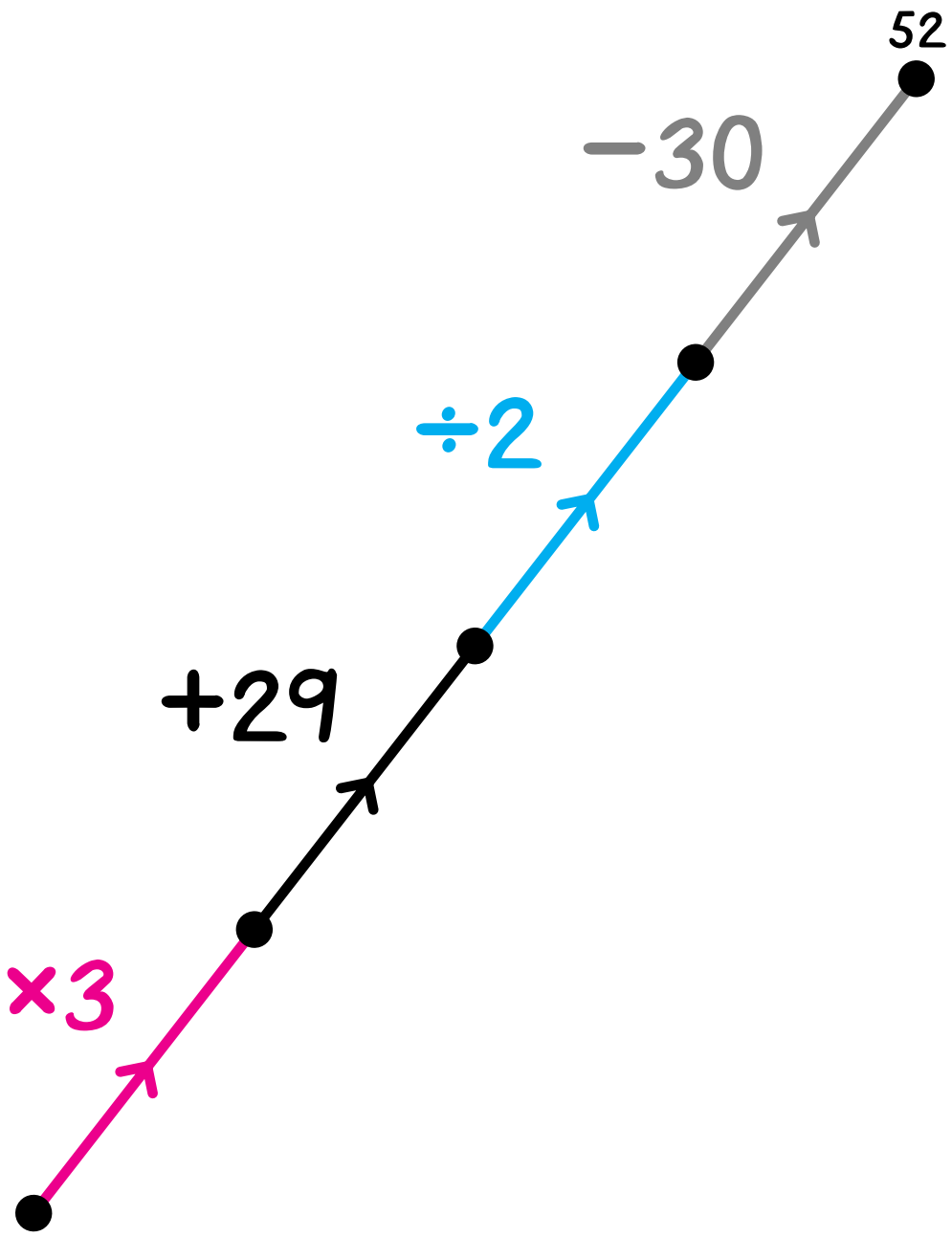


Rona wants to buy 12 pencils. Pencils are in packages of 2 for 45¢ and in packages of 3 for 65¢. What should Rona buy? Explain your answer.

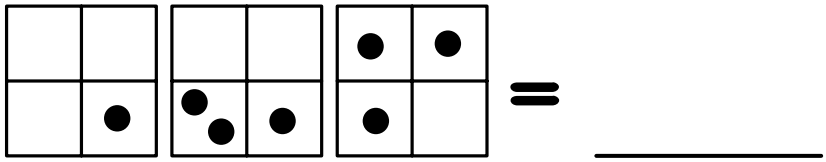
How much will 12 pencils cost? _____

Rona has $5.00. Can she buy 12 pencils? _____
If yes, how much change will she get? _____

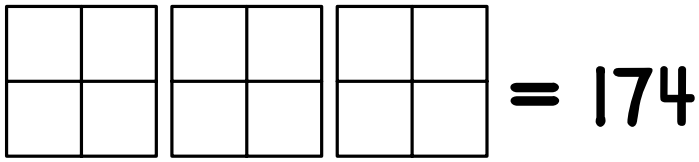
Draw and label all the return arrows.
Label the dots.

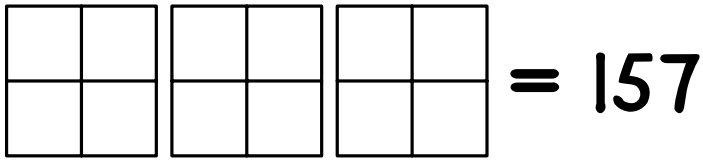


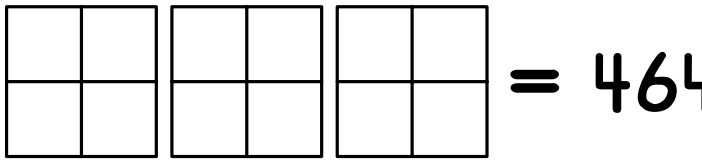
What number is on the Minicomputer?

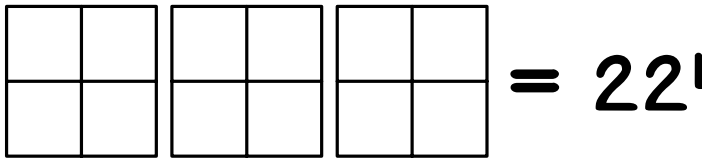
 = _____

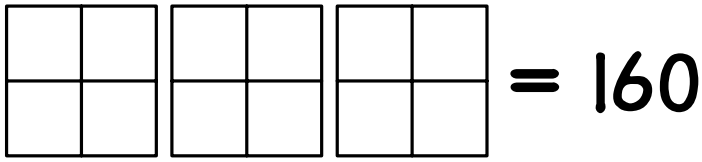
Put these numbers on the Minicomputer by moving exactly one checker.

 = 174

 = 157

 = 464

 = 224

 = 160

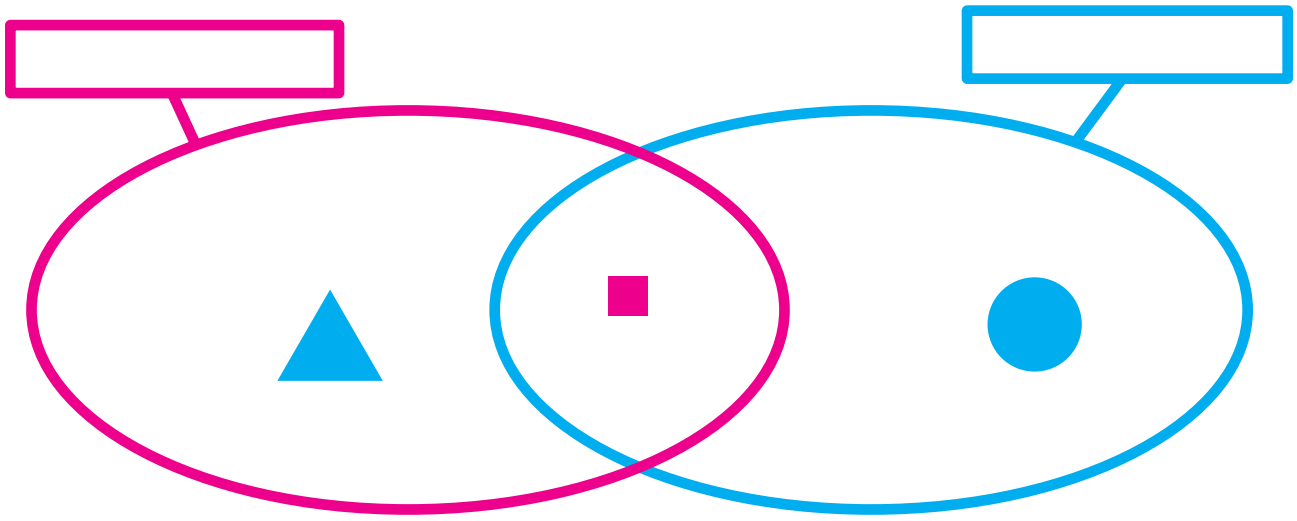
The red string is for one of these:

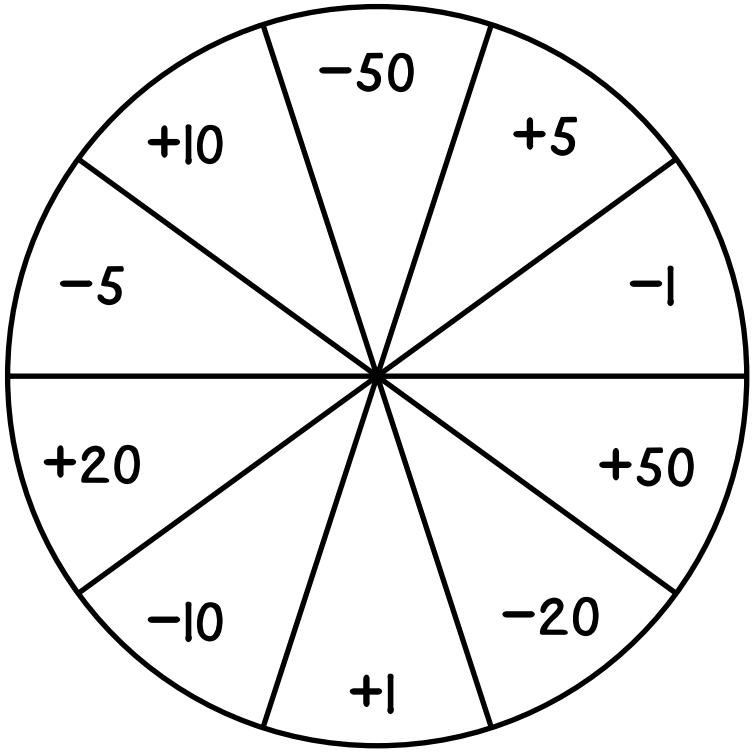
RED	YELLOW	GREEN	BLUE
NOT RED	NOT YELLOW	NOT GREEN	NOT BLUE
○	△	□	BIG
NOT ○	NOT △	NOT □	LITTLE

The blue string is for one of these:

RED	YELLOW	GREEN	BLUE
NOT RED	NOT YELLOW	NOT GREEN	NOT BLUE
○	△	□	BIG
NOT ○	NOT △	NOT □	LITTLE

Label the strings.





Some of these scores are possible after four spins. Show how you could get them.

Some of these scores are not possible after four spins. Cross them out.

75	100
76	101
77	102