

**Galaxy
of
Problems #2**

Build an arrow road from 0 to 123 using +100, +10, and +1 arrows.

123
●

+100

+10

+1

●
0

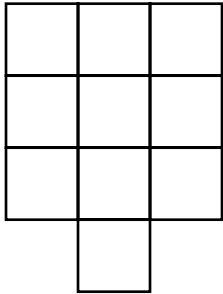
Complete this addition table.

+	10	20	30	40
10				
9				
18				

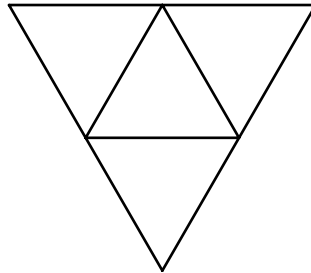
Complete this subtraction table.

-	7	10	5	6
11				
15				

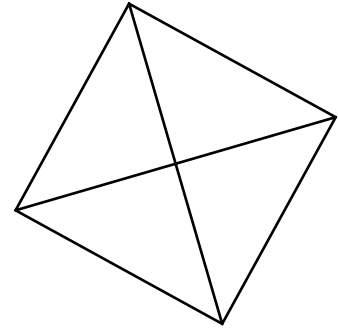
Color one-half of each shape red.



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

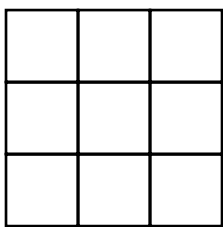


$$\frac{1}{2}$$

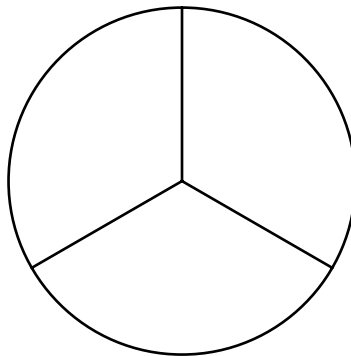


$$\frac{1}{2}$$

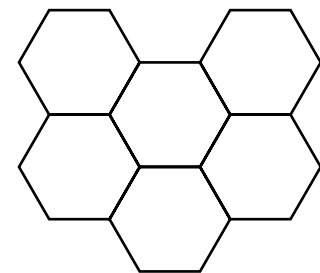
Color one-third of each shape blue.



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



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



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

Label the dots. Draw all the missing +1 (red) arrows.

+4

+1



Put these numbers on the Minicomputer using one positive and one negative checker for each.

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = 3$$

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = 6$$

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = 30$$

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = 16$$

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = 70$$

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = 32$$

Put any number you like on the Minicomputer using one positive and one negative checker.

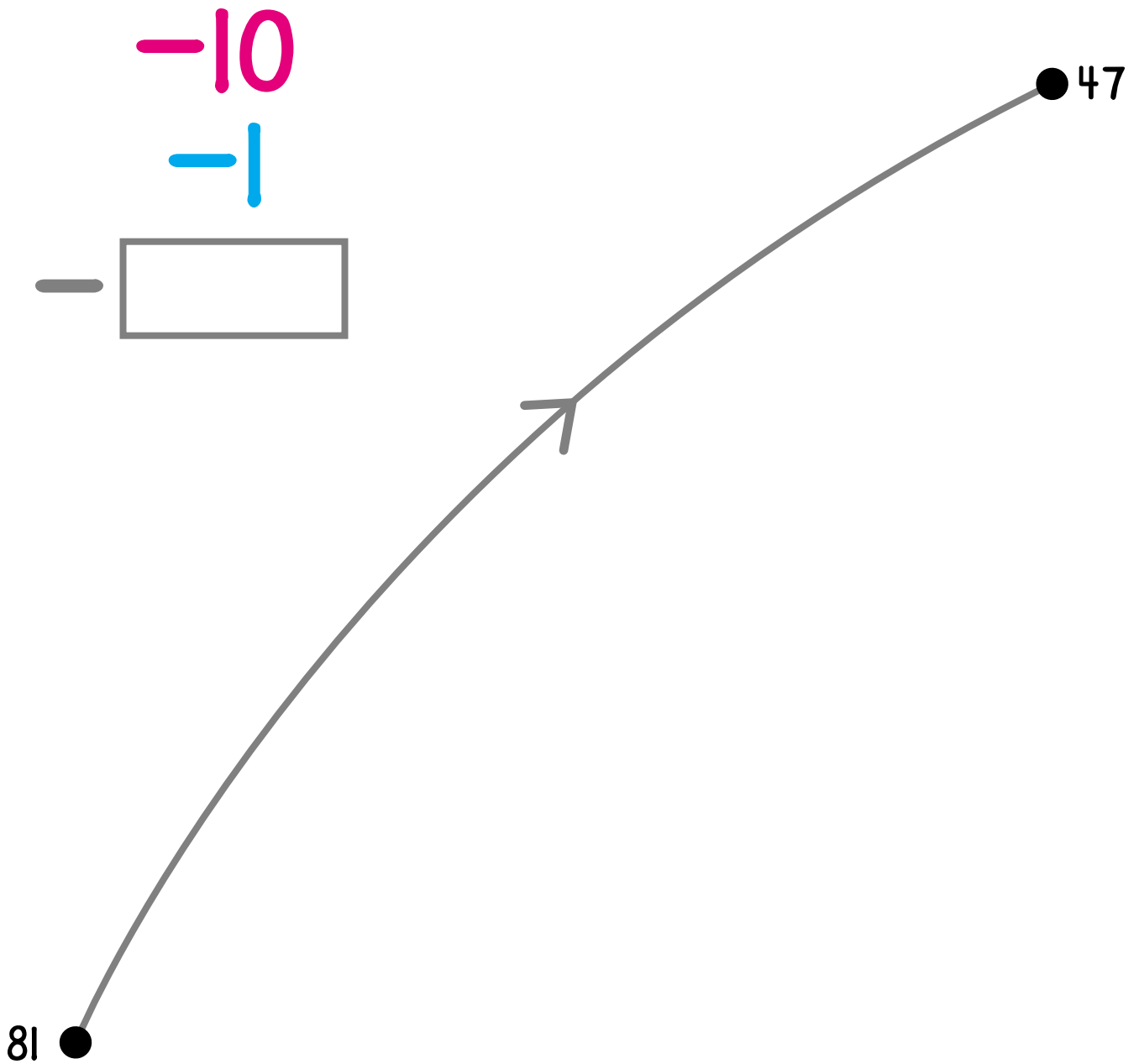
$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = \underline{\hspace{2cm}}$$

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = \underline{\hspace{2cm}}$$

$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = \underline{\hspace{2cm}}$$

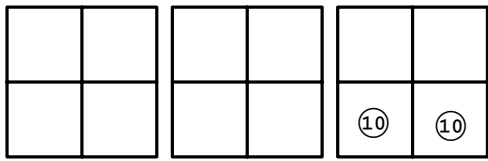
$$\begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} \begin{array}{|c|c|} \hline & \\ \hline & \\ \hline \end{array} = \underline{\hspace{2cm}}$$

Build an arrow road from 81 to 47 using -10 and -1 arrows.
Fill in the box for the gray arrow.



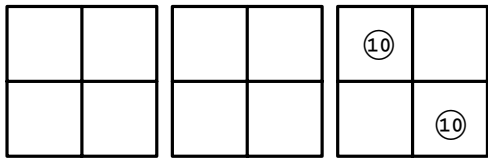
Write a calculation shown by the gray arrow.

Complete.



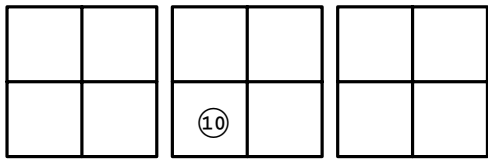
= _____

$10 \times 3 =$ _____



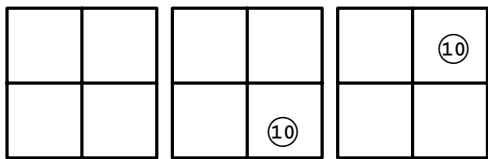
= _____

$10 \times 9 =$ _____



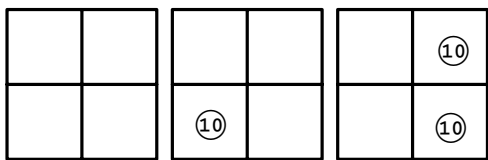
= _____

$10 \times 20 =$ _____



= _____

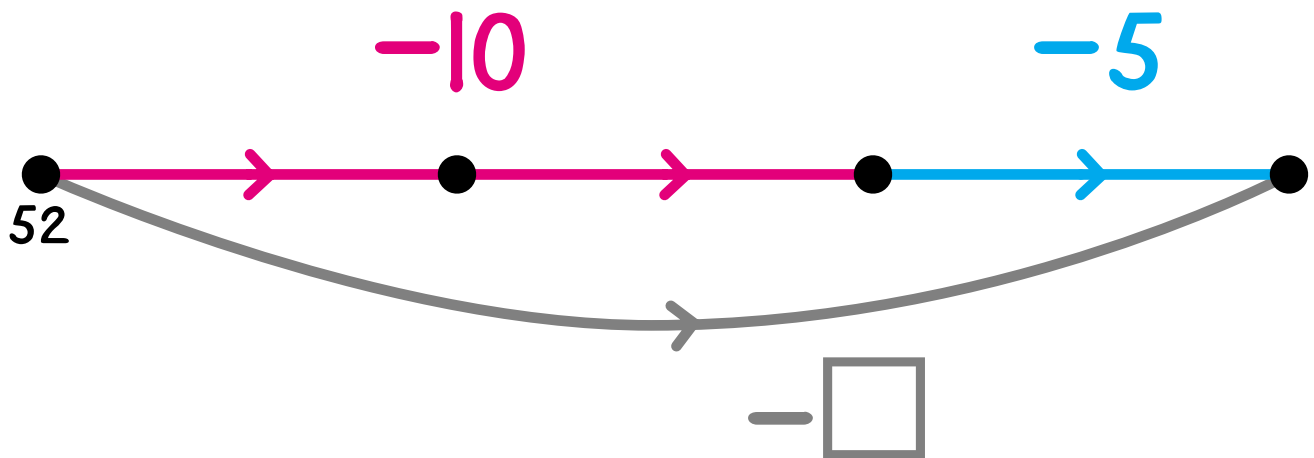
$10 \times 14 =$ _____



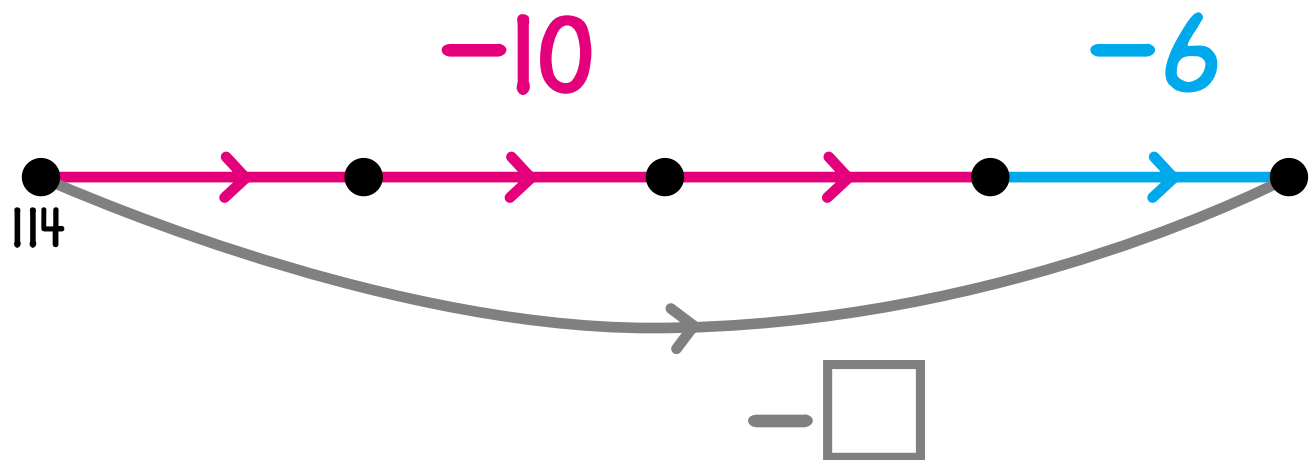
= _____

$10 \times 25 =$ _____

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



Write a calculation shown by the gray arrow.



Write a calculation shown by the gray arrow.

Five children are playing a game. They record their scores with tally marks.

Gary	Emanuel	Dawn	Melodie	Otis

List the children in order from lowest score to highest score.

Lowest _____ _____ _____ _____ _____ Highest

Suppose the children play with two teams, boys (Gary, Emanuel, Otis) and girls (Dawn, Melodie).

What is the score of the boy's team? _____

What is the score of the girl's team? _____

Otis has to leave the game and wants to share his points equally among the other four players. How many points should he give to each other person? _____

Build an arrow road from 0 to 32 using 10x and +1 arrows.











0
●

10x

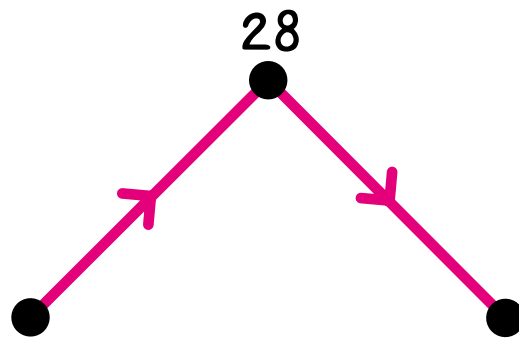
+1

●
32

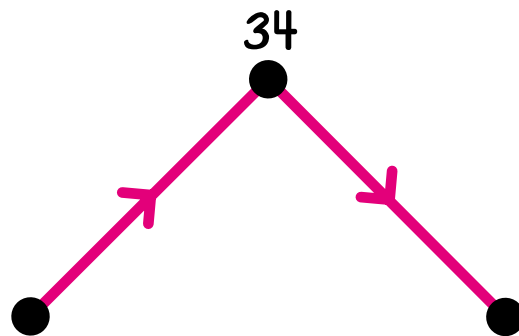
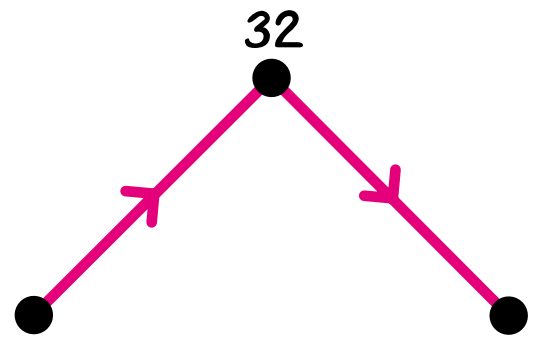
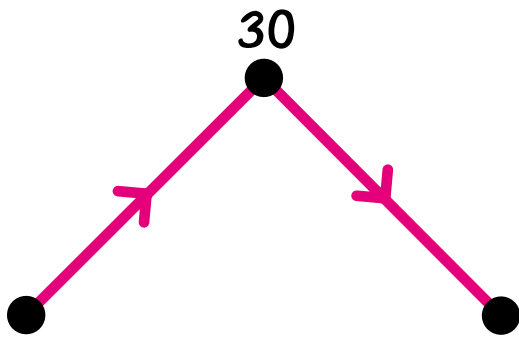
Show a way to have each amount of money in change. Many solutions are possible. One is done for you.

 Quarters	 Dimes	 Nickels	 Pennies	Total Amount
	   			46¢
				17¢
				65¢
				\$1.00
				\$0.39
				\$0.91

Label the dots.



2x



$2 \times 15 = \underline{\quad}$

$2 \times 17 = \underline{\quad}$

$2 \times 19 = \underline{\quad}$

$28 \div 2 = \underline{\quad}$

$32 \div 2 = \underline{\quad}$

$38 \div 2 = \underline{\quad}$

One Lunch

2 slices bread
4 slices ham
7 carrot sticks
12 chips
3 cookies

How much of each ingredient do you need to make:

Three Lunches

_____ slices bread
_____ slices ham
_____ carrot sticks
_____ chips
_____ cookies

Five Lunches

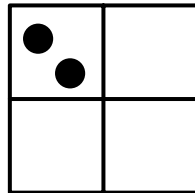
_____ slices bread
_____ slices ham
_____ carrot sticks
_____ chips
_____ cookies

Ten Lunches

_____ slices bread
_____ slices ham
_____ carrot sticks
_____ chips
_____ cookies

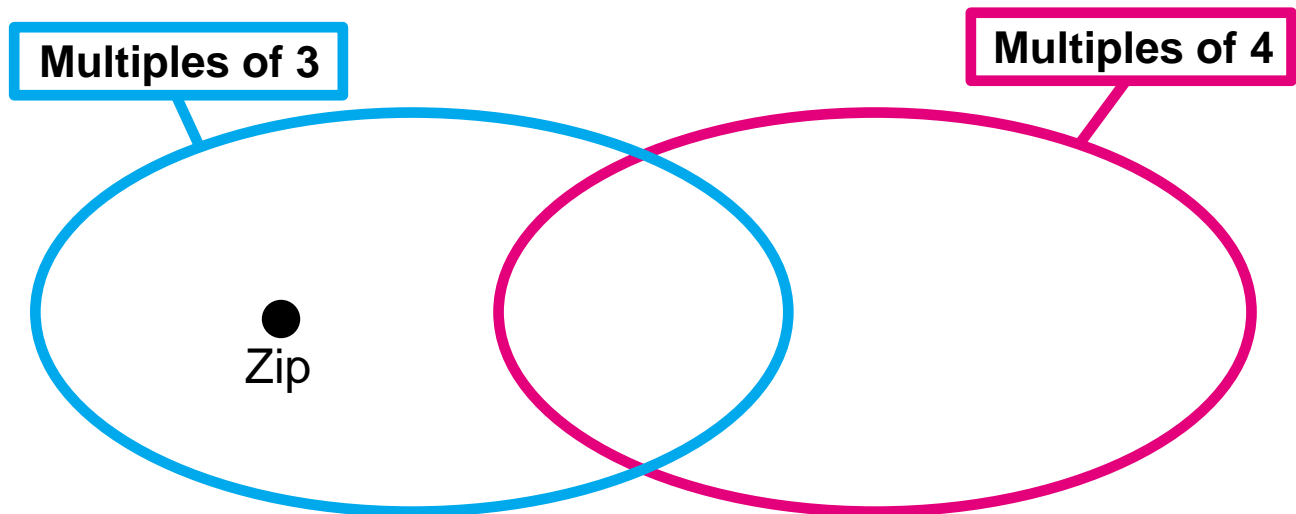
Zip is a secret number.

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



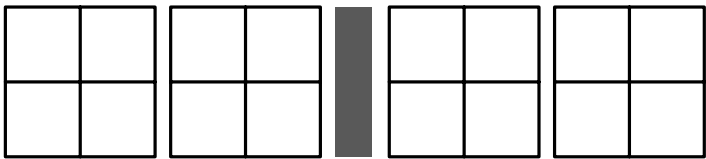
Zip could be _____, _____, _____, or _____.

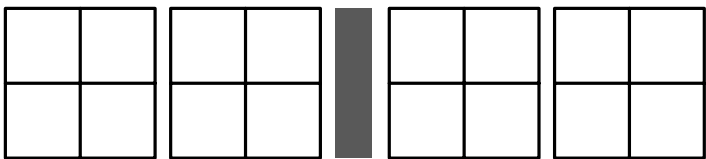
Zip is in this string picture.

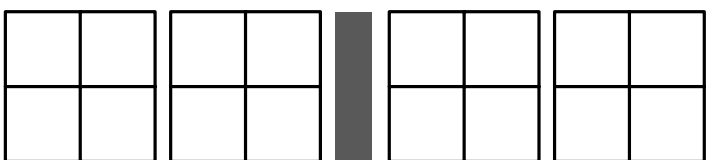


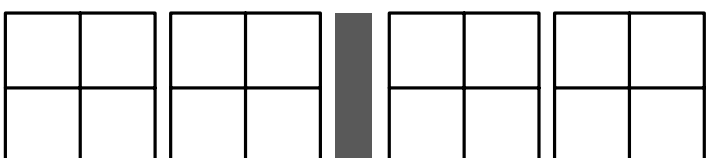
Who is Zip? _____

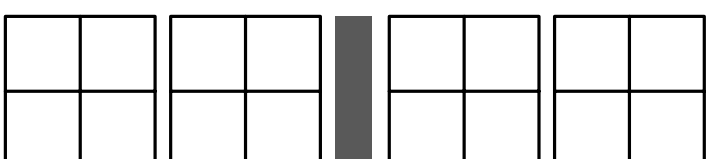
Put these numbers on the Minicomputer.

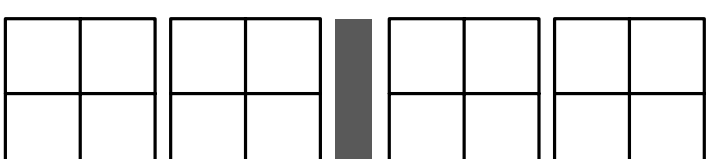
$10 =$ 

$0.50 =$ 

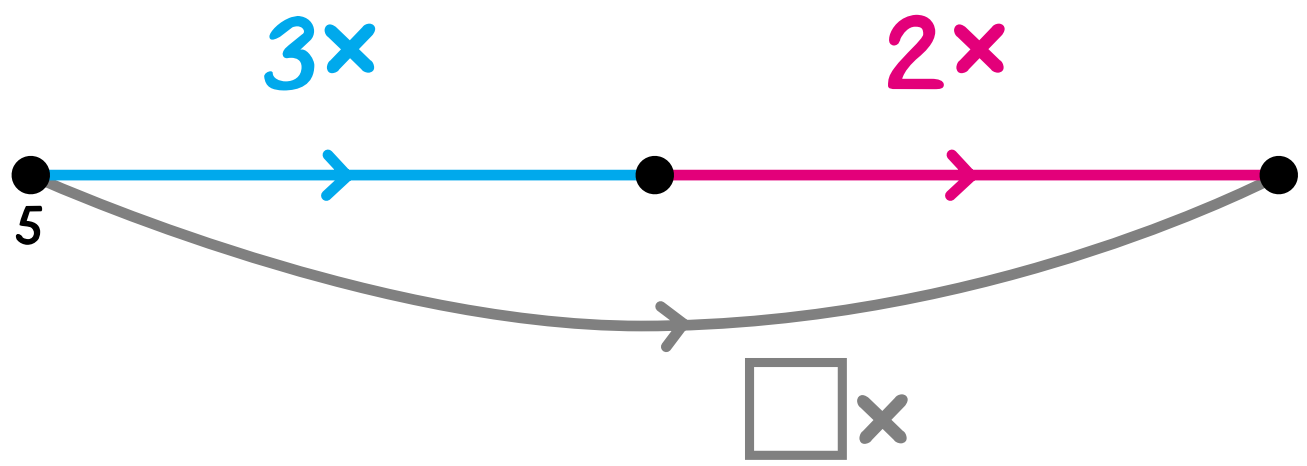
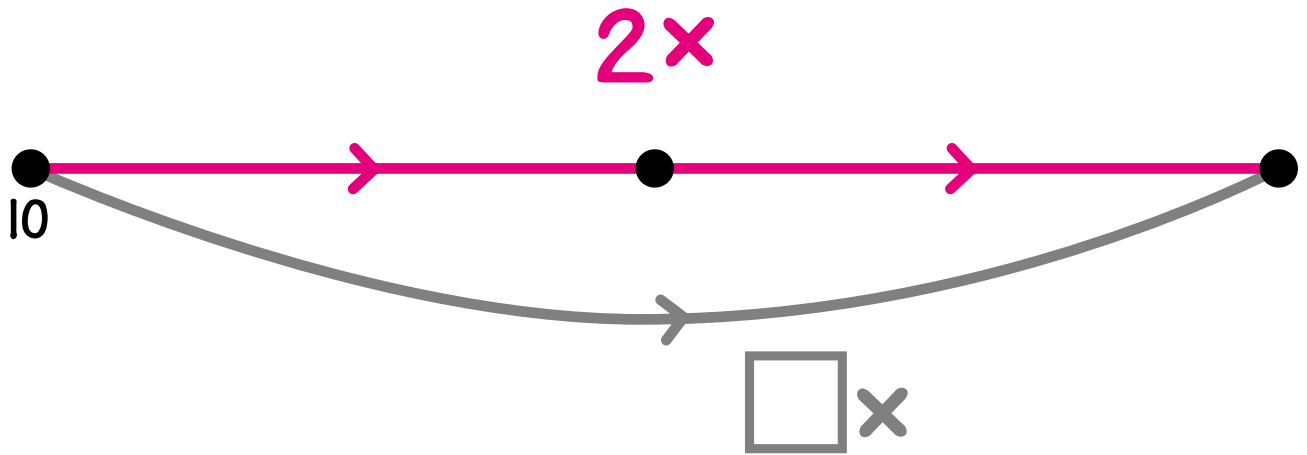
$10.50 =$ 

$4 =$ 

$0.28 =$ 

$4.28 =$ 

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



Use the pictures above to help with these calculations.

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

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

$4 \times 21 = \underline{\hspace{2cm}}$

$6 \times 7 = \underline{\hspace{2cm}}$

Complete this addition table.

+	5	0	$\hat{2}$	10
$\hat{1}$				
$\hat{5}$				
2				
$\hat{3}$				

$$10 + \hat{4} = \underline{\hspace{2cm}}$$

$$\hat{7} + 7 = \underline{\hspace{2cm}}$$

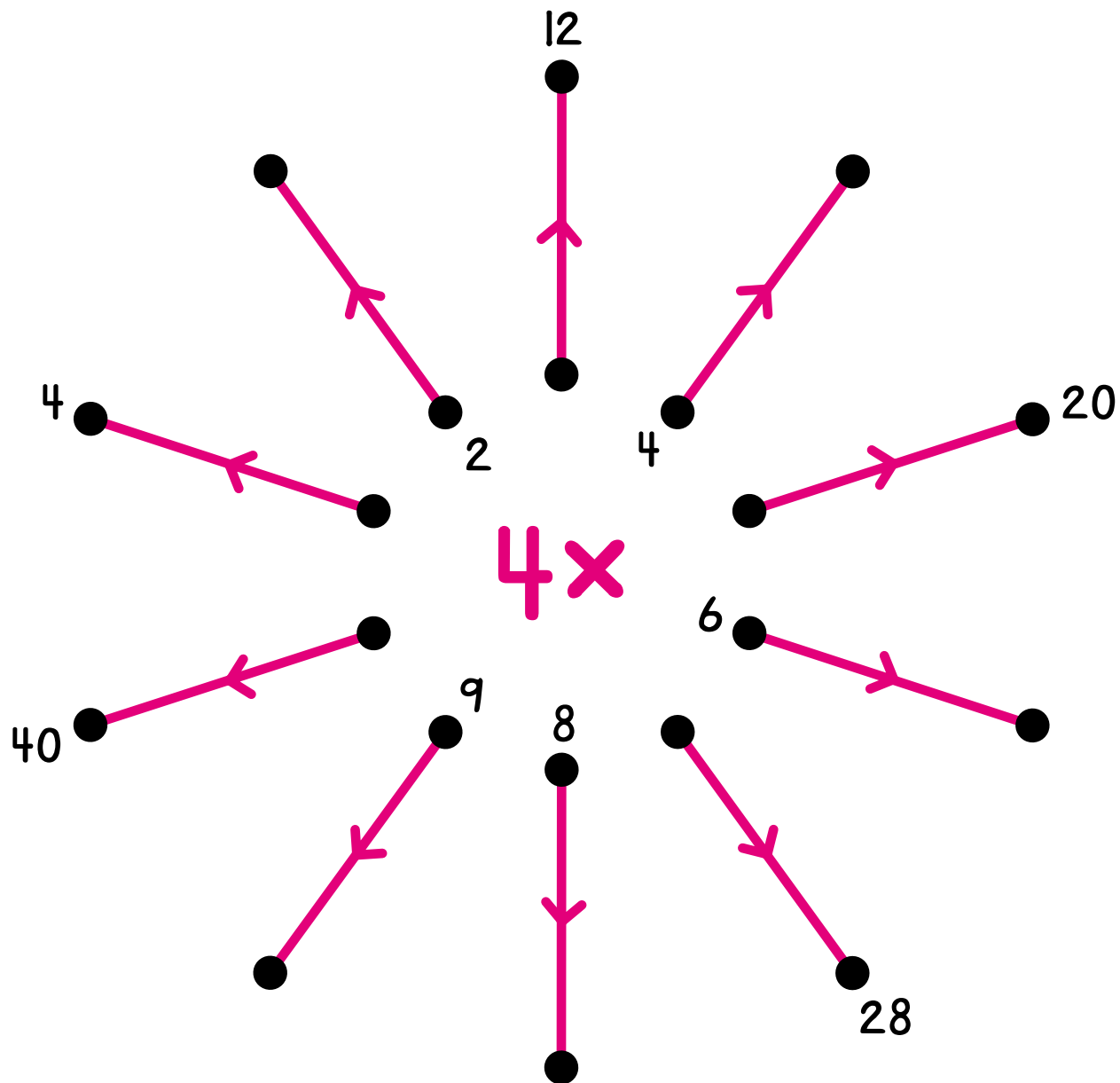
$$\hat{5} + \hat{5} = \underline{\hspace{2cm}}$$

$$0 + \hat{8} = \underline{\hspace{2cm}}$$

$$\hat{6} + 12 = \underline{\hspace{2cm}}$$

$$10 + 3 = \underline{\hspace{2cm}}$$

Label the dots.



$4 \times 9 = \underline{\quad}$

$4 \times 5 = \underline{\quad}$

$4 \times 7 = \underline{\quad}$

$4 \times 6 = \underline{\quad}$

$4 \times 3 = \underline{\quad}$

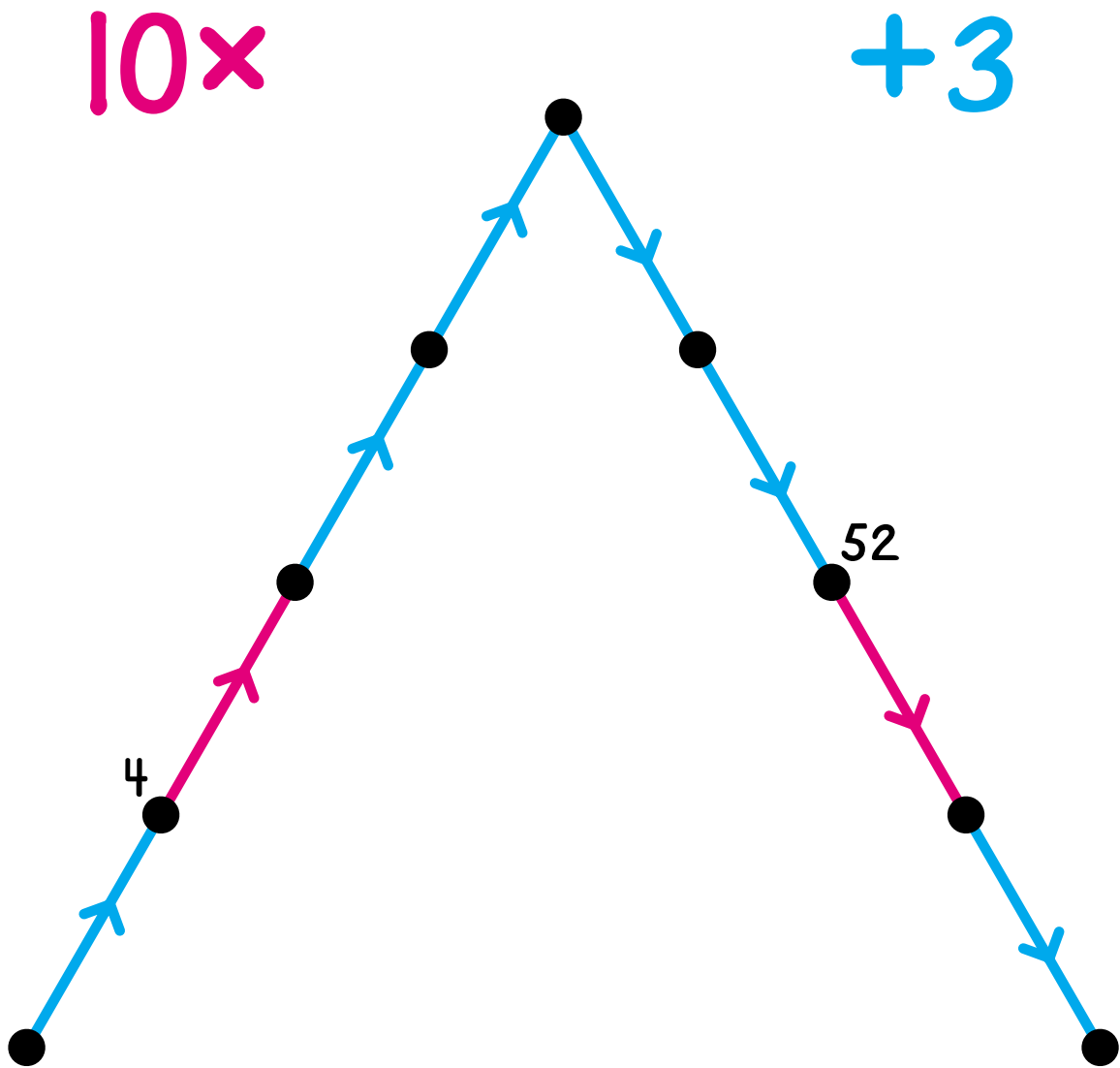
$4 \times 2 = \underline{\quad}$

$4 \times 4 = \underline{\quad}$

$4 \times 10 = \underline{\quad}$

$4 \times 0 = \underline{\quad}$

Label the dots.



Complete these number sentences.

$$(7 + 8) \times 2 = \underline{\hspace{2cm}}$$

$$7 + (8 \times 2) = \underline{\hspace{2cm}}$$

$$8 + (7 \times 2) = \underline{\hspace{2cm}}$$

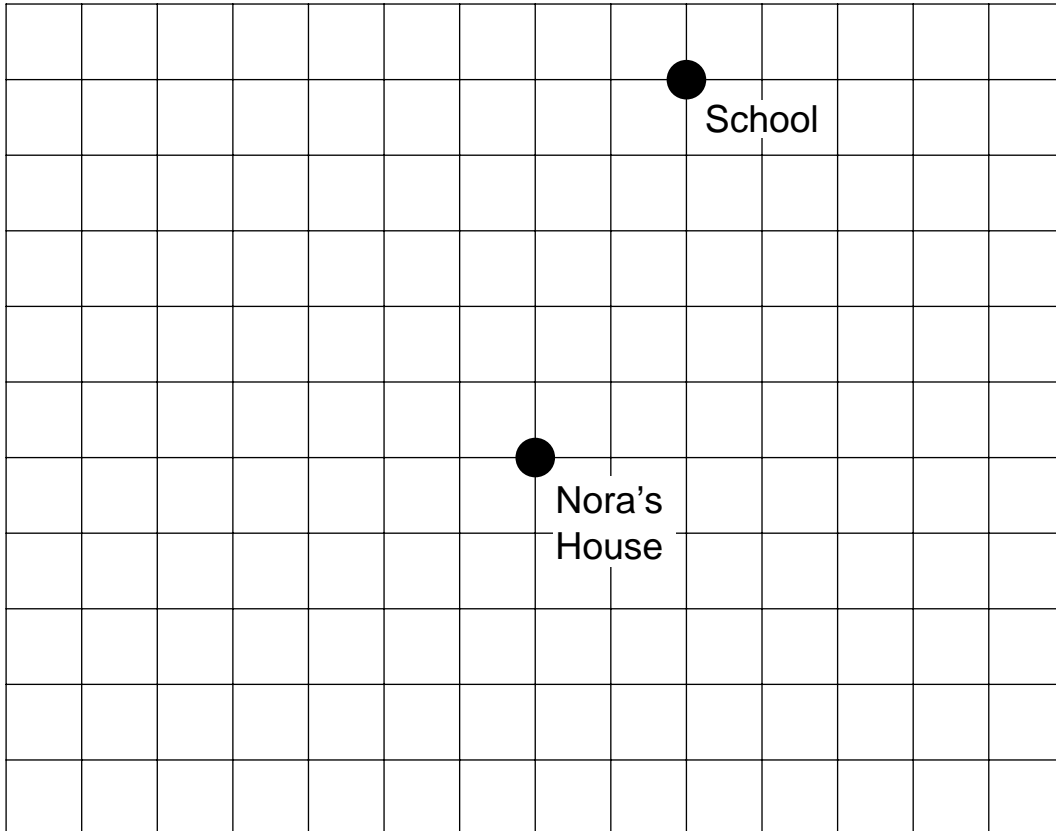
$$(3 \times 5) - 4 = \underline{\hspace{2cm}}$$

$$3 \times (5 - 4) = \underline{\hspace{2cm}}$$

$$(3 \times 4) - 5 = \underline{\hspace{2cm}}$$

Help Nora find Sonja's house by using these clues.

Clue 1 Sonja lives 4 blocks (taxi-distance) from Nora.

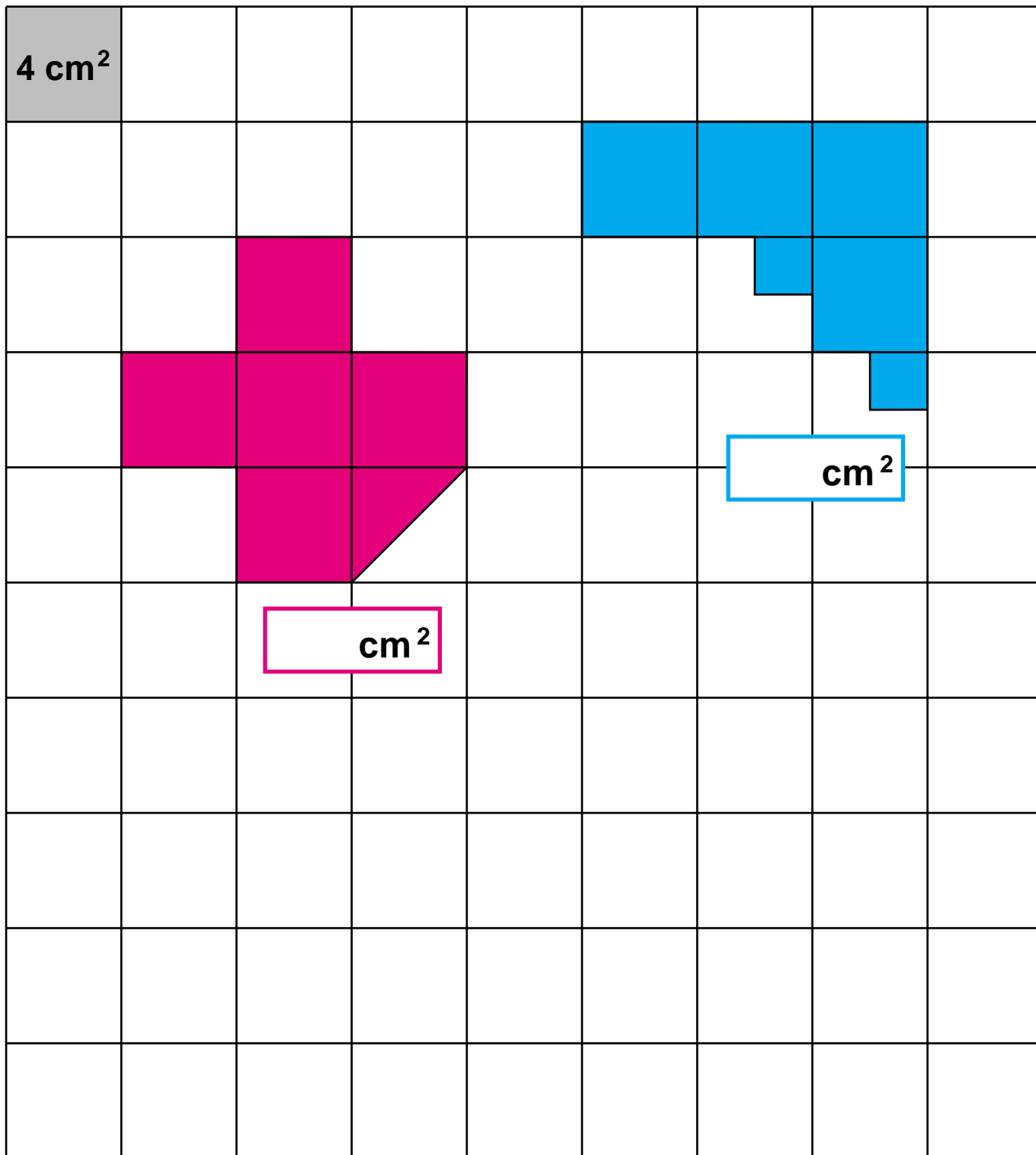


Clue 2 Sonja only has to walk 3 blocks to school.

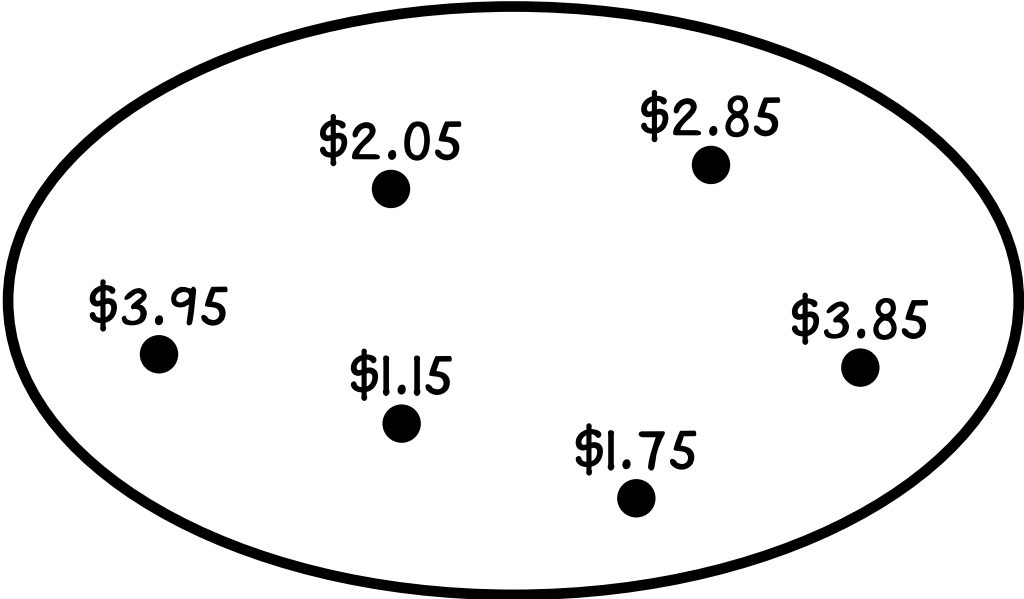
Clue 3 Nora can get to Sonja's house going in one direction.

Label a dot for Sonja's house.

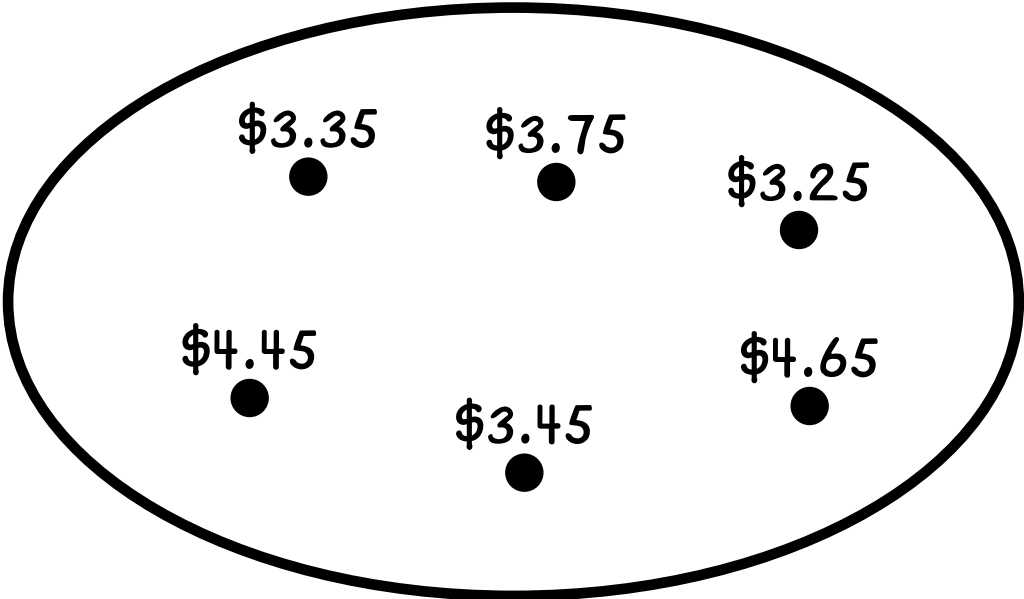
Find the area of each shape. Color a shape whose area is 30 cm^2 .



Lisa buys two flags and spends exactly \$5. Draw one string around the prices of these two flags.



Bryce buys two books and spends exactly \$8. Draw one string around the prices of these two books.



Build an arrow road from 0 to 503 using $10\times$ and $+1$ arrows.

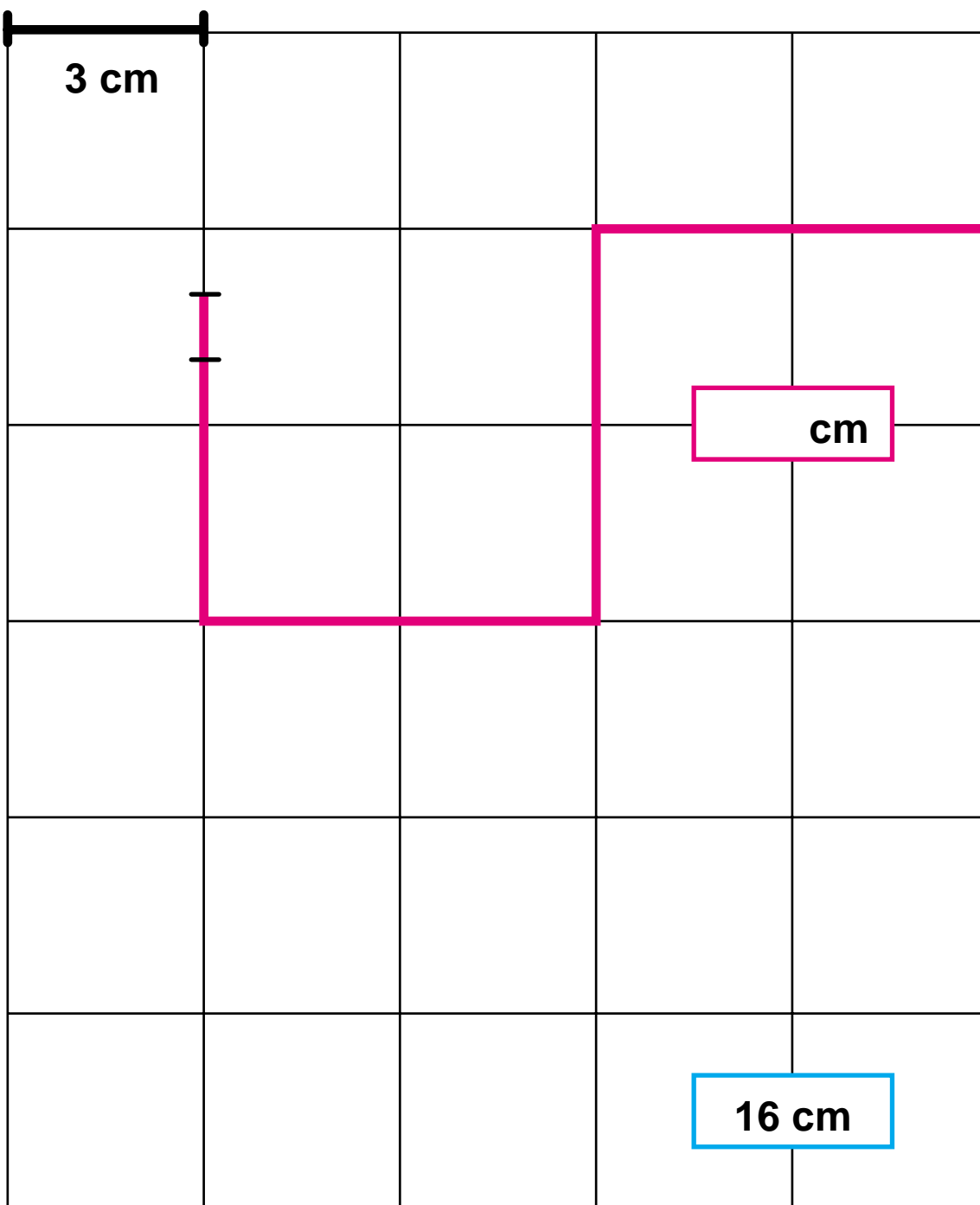
0
●

$10\times$

$+1$

●
503

Find the length of the red zigzag path.
Draw a blue zigzag path that is 16 cm long.



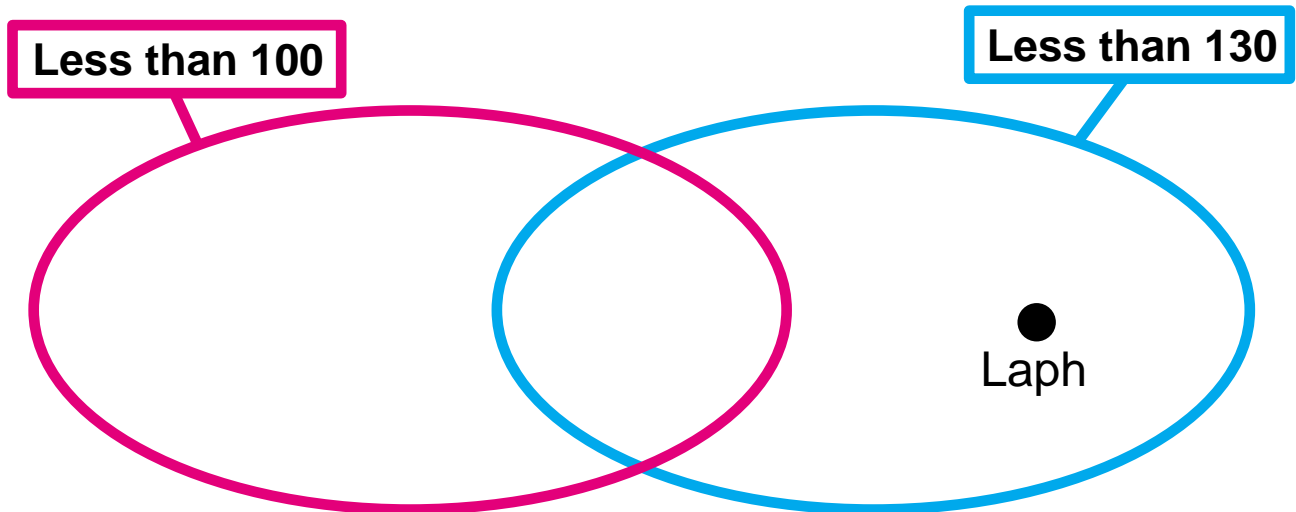
Circle all the multiples of 8 in red.
Circle all the multiples of 9 in blue.

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99
100	101	102	103	104	105	106	107	108	109

What do you notice about your picture?

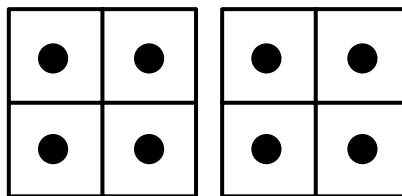
Are any numbers circled both red and blue?

Laph is a secret number.
Laph is in this string picture.



What is the greatest whole number Laph could be? _____
What is the least whole number Laph could be? _____

Laph can be put on this Minicomputer by taking off exactly one checker.



Who is Laph? _____

Put in parentheses to get as small a number as possible.

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

$$4 \times 4 + 6 = \underline{\hspace{2cm}}$$

$$7 \times 2 - 1 = \underline{\hspace{2cm}}$$

$$8 - 4 \times 2 = \underline{\hspace{2cm}}$$

$$9 + 3 \times 5 = \underline{\hspace{2cm}}$$

Put the six number cards 1 2 3 4 5 6 in the spaces of this subtraction problem. Use all the cards, each card once.

$$\begin{array}{r} \square \square \square \\ - \square \square \square \\ \hline \end{array}$$

What is the greatest difference you can get? _____

Explain.

$$\begin{array}{r} \square \square \square \\ - \square \square \square \\ \hline \end{array}$$

What is the least positive difference you can get? _____

Explain.

$$\begin{array}{r} \square \square \square \\ - \square \square \square \\ \hline \end{array}$$

Can you get a difference between 300 and 400? _____

Explain.

$$\begin{array}{r} \square \square \square \\ - \square \square \square \\ \hline \end{array}$$

Can you get a difference of 406? _____

Explain.

$$\begin{array}{r} \square \square \square \\ - \square \square \square \\ \hline \end{array}$$