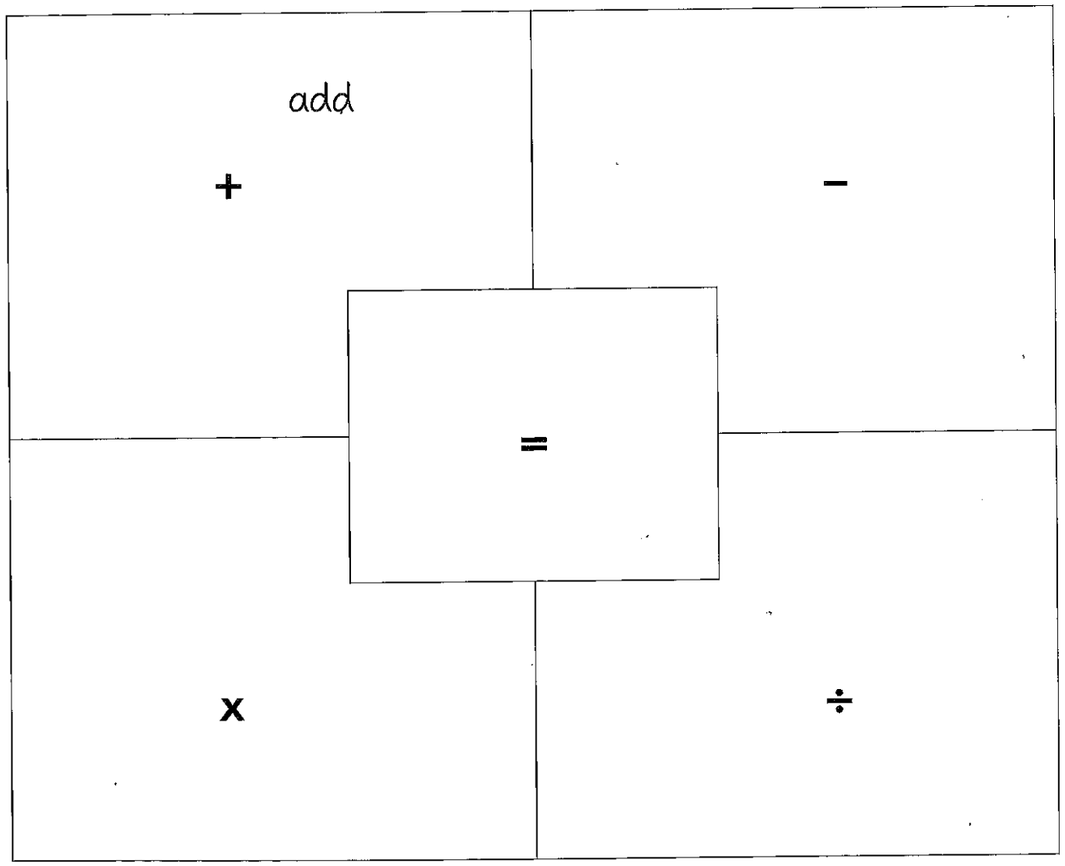
The language of mathematics

Operations

Place the terms below in the correct box.

subtract	~~add~~	multiply	fewer
total	of	take away	combine
decrease	product	out of	increase
deduct	equals	double	gives
share between	altogether	divide	minus
goes into	and	together	less
will be	plus	is	times



Words to operations

Write the following as calculations using one operation (**+**, **−**, **x** or **÷**). Then write the solution to each.

	Terms	Calculation	Answer
1	Twelve **shared** between three.	12 ÷ 3	4
2	What is two **more than** five?		
3	Calculate three **times** two.		
4	Find eight **divided** by four.		
5	Nine is **added** to three.		
6	What is ten **take away** four?		
7	What is ten **shared between** two?		
8	Calculate two **multiplied by** five.		
9	What is one **increased by** seven?		
10	Find the **difference between** five and one.		
11	What is eight **plus** four?		
12	Find the **sum of** three and five.		
13	What is six **split between** three?		
14	Calculate three **less than** five.		
15	What is three **minus** one?		

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Word questions

	Question	Operator (+, –, x or ÷)	Working	Answer
1	Joe has been asked to sort the tennis balls into three equal bins. There are twenty-one tennis balls. How many will be in each bin?			
2	Two friends went busking. One earned twenty-three dollars and the other got fourteen. How much did they earn in total?			
3	Nikau gets twenty dollars for each car he washes. On Saturday he washed four cars. How much did he earn?			
4	Angus and three friends shared a packet of twelve biscuits equally between them. How many biscuits did each get?			
5	Riley's mum gave him five pens to use at school. By the end of the first term, he had lost three. How many pens did he have left?			
6	Luca has ten cows and six sheep on his farm. How many cows and sheep does he have altogether?			
7	Gregory makes twelve sandwiches to share equally with his five friends. How many sandwiches does each of them get?			
8	Rosa has three ice cube trays with fourteen cubes in each. How many ice cubes does she have altogether?			
9	Natsuki has sixteen lollies. She gives nine away to her friend Lucy. How many lollies does Natsuki have left?			

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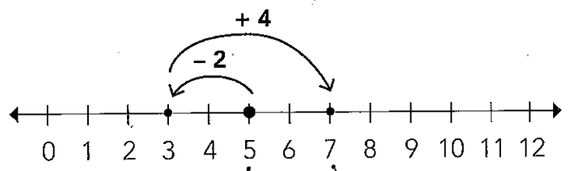
Integers

Adding and subtracting positive integers

- **–** means move **left**.
- **+** means move **right**.

Do this on a number line.

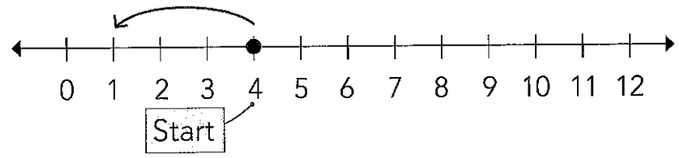


Example: 5 – 2 + 4 = **(5 – 2)** + 4
= **3** + 4
= 7

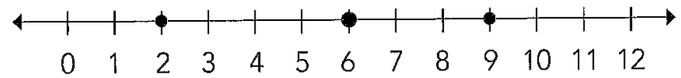
Work from left to right.

Add arrows and dots to these number lines in order to complete the calculations.

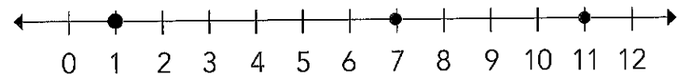
1 4 – 3 + 6 =



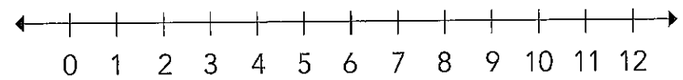
2 6 + 3 – 7 =



3 1 + 10 – 4 =



4 5 + 7 – 10 =



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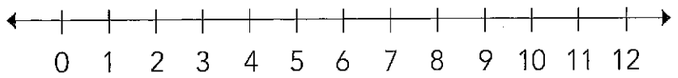
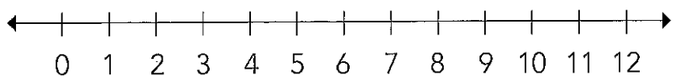
5 $10 - 7 - 2 + 4 =$



6 $6 + 3 - 7 + 1 =$



Complete the calculations.

7 $9 + 1 - 6 =$ _____

8 $7 - 1 + 2 =$ _____

9 $3 + 7 - 8 =$ _____

10 $4 - 1 + 8 =$ _____

11 $9 - 5 - 2 + 1 =$ _____

12 $6 + 1 - 5 - 2 =$ _____

Place these values in ascending order (smallest to largest).

13 8 12 4 2 ~~3~~ 10 0 6

Smallest | | | 3 | | | | Largest

14 2 12 0 21 11 22 1 20

Smallest | | | | | | | | Largest

15 34 4 30 13 43 3 14 40

Smallest | | | | | | | | Largest

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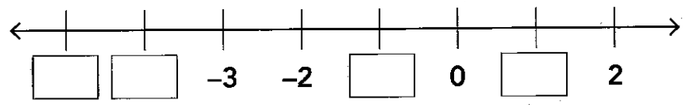
Adding and subtracting negative integers

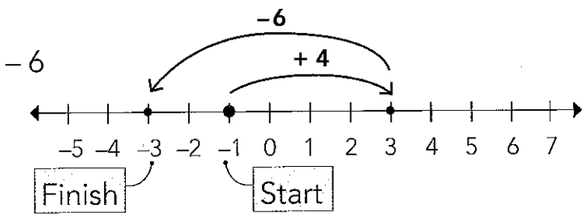
- Negative numbers are numbers less than zero.
- On a number line they are to the left of 0.

1 Complete the number line by adding the correct values.



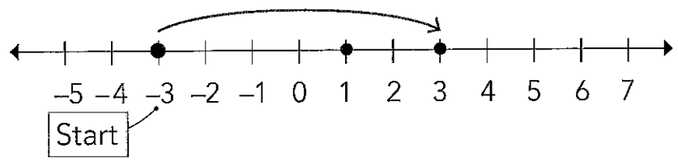
Work from left to right.

Example: $-1 + 4 - 6 = \mathbf{(-1 + 4)} - 6$
$= \mathbf{3} - 6$
$= -3$

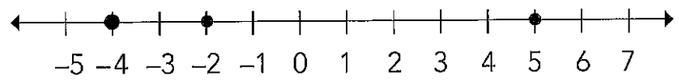


Add arrows and dots to these number lines in order to complete the calculations.

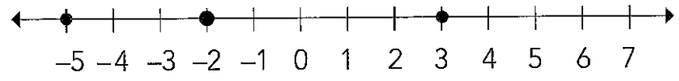
2 $-3 + 6 - 2 =$



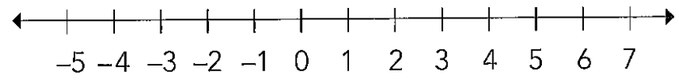
3 $-4 + 2 + 7 =$



4 $-2 - 3 + 8 =$



5 $2 - 6 + 5 - 1 =$



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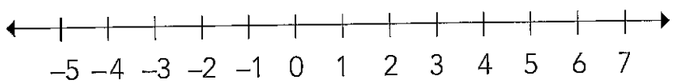
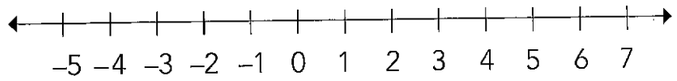
6 $-4 + 6 - 2 + 1 =$



7 $5 - 7 + 3 - 4 =$



Complete the calculations.

8 $-5 + 7 =$ _____ **9** $4 - 7 + 2 =$ _____

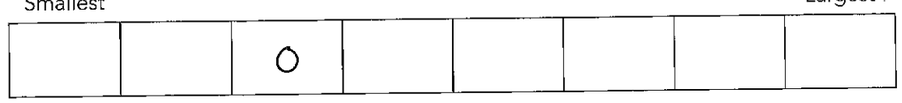
10 $-3 + 4 - 7 =$ _____ **11** $2 - 6 + 1 =$ _____

12 $-5 + 4 - 2 + 6 =$ _____ **13** $6 - 4 + 1 - 5 =$ _____

Place these values in ascending order (smallest to largest).

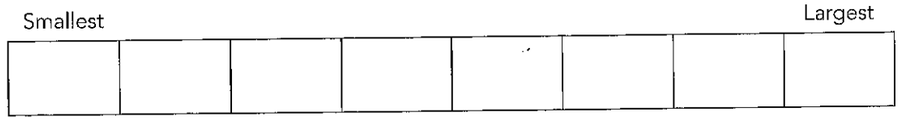
14 1 4 –1 0 –2 5 3 6

Smallest Largest



15 –7 12 4 0 –2 –12 7 9

Smallest Largest



16 3 13 –3 31 0 –13 –31 1

Smallest Largest

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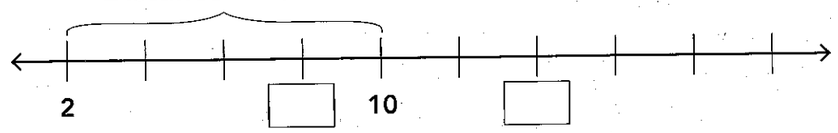
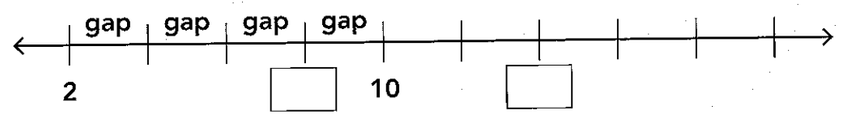
Integers on number lines

Here is how to work out the size of each gap between ticks on a number line.

Step 1: Calculate the **distance** between two **labelled** points.
Distance = 10 – 2 = **8**.

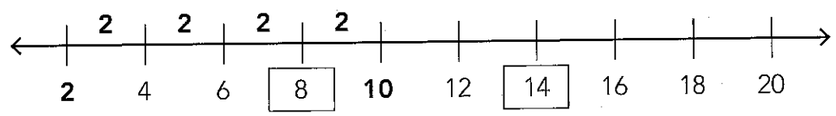


Step 2: Count the **number of gaps** between 2 and 10.
Number of gaps = 4.



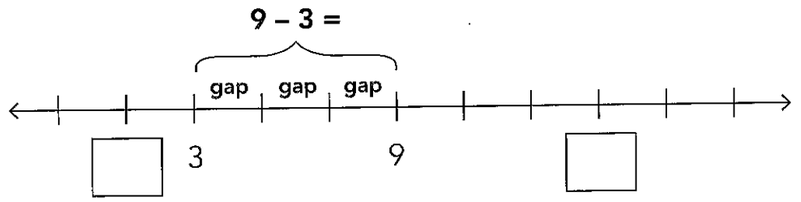
Step 3: Divide the distance by the number of gaps: $\frac{8}{4} = 2$.

Step 4: Add 2 after each gap along the number line.



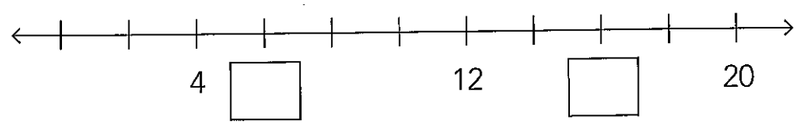
Calculate the size of each gap and write the missing integers on the number lines.

1



Size of gap = $\frac{\textbf{interval}}{\textbf{gaps}} = \frac{\textbf{9 – 3}}{\textbf{3}} = \textbf{2}$.

2



Size of gap =

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