



- 1 Which is colder, -4°C or -9°C ?

(1 mark)

-9 is further below 0 than -4

-9°C

- 2 The temperatures in five cities one morning were

-3°C , 5°C , -8°C , 0°C , 2°C

Write these temperatures in order, starting with the lowest.

(2 marks)

negatives: -8 is lower than -3

$-8, -3, 0, 2, 5$

- 3 Work out $-3 + 8$

(1 mark)

Start at -3 on a number line and move 8 to the right

$$-3 + 8 = 5$$

5

- 4 Work out $4 - 9$

(1 mark)

Start at 4 on a number line and move 9 to the left

$$4 - 9 = -5$$

-5

- 5 At 6 am the temperature was 4°C . By midnight it had fallen by 11°C .

What was the temperature at midnight?

(2 marks)

$$4 - 11 = -7$$

-7°C

- 6 Amira has £45 in her bank account. She pays a bill of £60.
- Work out her new balance.
 - She then pays £100 into the account. Work out her balance now.

(2 marks)

a)

$$45 - 60 = -15$$

-£15

b)

$$-15 + 100 = 85$$

£85

- 7 A lift is on floor 2. It goes down 5 floors. The floors below the ground floor are numbered -1, -2, -3 and so on.

Which floor is the lift on now?

(1 mark)

$$2 - 5 = -3$$

floor -3

- 8 Work out $-6 - 5$

(1 mark)

Start at -6 on a number line and move 5 to the left

$$-6 - 5 = -11$$

-11

- 9 A submarine is 40 m below sea level. It rises 25 m.
- Write the new position of the submarine as a negative number, in metres, compared with sea level.
 - How many more metres must it rise to reach sea level?

(2 marks)

a)

$$-40 + 25 = -15$$

-15 m

b)

15 m

10

Work out

a. $5 - (-3)$

b. $-2 - (-6)$

(2 marks)

a)

$$5 - (-3) = 5 + 3$$

8

b)

$$-2 - (-6) = -2 + 6$$

4

11

In one week the lowest temperature was -8°C and the highest was 6°C .

Work out the difference between the highest and lowest temperatures.

(2 marks)

$$-8 \text{ to } 0 = 8$$

$$0 \text{ to } 6 = 6$$

$$8 + 6 = 14$$

14°C

12

At midnight the temperature in York was -4°C .By 4 am the temperature had fallen by 5°C .By 10 am the temperature had risen by 8°C from its 4 am value.

Work out the temperature at 10 am.

(2 marks)

Temperature at 4 am

$$-4 - 5 = -9^{\circ}\text{C}$$

Temperature at 10 am

$$-9 + 8 = -1^{\circ}\text{C}$$

-1°C

13

The temperature in Cardiff is 3°C .The temperature in Oslo is -8°C .

Work out how many degrees colder Oslo is than Cardiff.

(2 marks)

$$\text{Difference} = 3 - (-8) = 3 + 8$$

Oslo is 11 degrees colder than Cardiff

11

14

- a. Work out $(-4)^2$
b. Work out $2 - (-7)$
c. Put a pair of brackets in this statement to make it true.
 $3 - 5 \times 2 = -4$

(3 marks)

a) $(-4)^2 = -4 \times -4 = 16$ (negative times negative is positive)

b) Subtracting -7 is the same as adding 7

$$2 + 7 = 9$$

c) $(3 - 5) \times 2 = -2 \times 2 = -4$, so the brackets go around $3 - 5$