Test answers - Negative numbers

Year: Year 4 · Duration: 40 minutes · /20

Answer to Question 1 (4 marks)

a. Negative numbers come before 0. The further a negative number is from zero, the smaller it is, so −9 is smallest. Order: **−9, −4, −1, 0, 3, 6** (2 marks: 1 for the negatives in the right order, 1 for the full list).
b. The negative numbers are −9, −4 and −1. The largest is the one closest to zero: **−1** (1 mark).
c. On a number line −5 is to the right of −8, so it is greater: **−5 > −8** (1 mark). It is 5 degrees below freezing compared with 8 below, which is warmer.

Answer to Question 2 (4 marks)

a. Count back 5 to reach 0, then 3 more below zero: 5 − 8 = **−3** (1 mark).
b. Count up 6 from −6 to reach 0, then 3 more: −6 + 9 = **3** (1 mark).
c. Each number is 3 less than the one before, so keep taking away 3: −3 − 3 = **−6**, then −6 − 3 = **−9** (2 marks: 1 for each number).

Answer to Question 3 (4 marks)

a. The liquid stops 3 marks below the 0 line, so the thermometer shows **−3 °C** (1 mark).
b. Falling by 5 degrees means counting down 5 from −3: −4, −5, −6, −7, −8. The temperature is **−8 °C** (1 mark).
c. Freezing is 0 °C. −8 °C is 8 steps below zero, so it is **8 degrees** below freezing (1 mark).
d. From −3 up to 0 is 3 degrees, and from 0 up to 4 is 4 degrees. The difference is 3 + 4 = **7 degrees** (1 mark).

Answer to Question 4 (4 marks)

a. The coldest temperature is the lowest number. −12 is further below zero than −8, so **Moscow** (−12 °C) was coldest (1 mark).
b. Count up from Oslo's −8 °C to 0: 8 degrees. Then from 0 up to London's 3 °C: 3 degrees. The difference is 8 + 3 = **11 degrees** (2 marks: 1 for crossing zero, 1 for 11).
c. Count down 6 from 3 °C: 3 to 0, then 3 more below zero. 3 − 6 = **−3 °C** (1 mark).

Answer to Question 5 (4 marks)

a. Count up 5 from −4: 4 steps take it to 0, then 1 more. At 10 am it is **1 °C** (1 mark).
b. It rises 3 more: 1 + 3 = **4 °C** at 2 pm (1 mark).
c. It falls by 7: 4 down to 0 is 4 steps, then 3 more below zero. At 10 pm it is **−3 °C** (1 mark).
d. The day's temperatures were −4, 1, 4 and −3 °C. Warmest 4 °C, coldest −4 °C. From −4 to 0 is 4 and from 0 to 4 is 4, so the difference is **8 degrees** (1 mark).