Integers topic test

15 questions | 30 marks | 45 minutes

A progressive by-hand review of signed quantities, order and integer addition/subtraction.

Equivalent correct methods earn the corresponding marks.

1. Write a signed height for 12 m below sea level. [1 mark]

Sea level is zero and below is negative.

Answer: -12 m

2. Write the opposite of $+8$. [1 mark]

The opposite is the same distance from zero on the other side.

Answer: -8

3. Put $<$ or $>$ between -4 and -9. [1 mark]

-4 is further right on the number line.

Answer: $-4 > -9$

4. Write -6, 3, -1 and 0 in ascending order. [2 marks]

Place them from left to right.

Answer: -6, -1, 0, 3

5. Find the distance between -7 and 5. [2 marks]

Seven units reach zero, then five more reach 5.

$7 + 5 = 12$.

Answer: 12 units

6. Calculate $-5 + 12$. [1 mark]

Five opposite units cancel, leaving seven positive units.

Answer: 7

7. Calculate $-6 + (-8)$. [1 mark]

Add the sizes 6 and 8 in the negative direction.

Answer: -14

8. Calculate $11 - 16$. [1 mark]

The subtraction passes zero by five units.

Answer: -5

9. Calculate $4 - (-7)$. [2 marks]

Rewrite as $4 + 7 = 11$.

Answer: 11

10. Calculate $-9 - (-2)$. [2 marks]

Rewrite as $-9 + 2 = -7$.

Answer: -7

11. Evaluate $3 - 8 + 4$. [2 marks]

$3 - 8 = -5$.

$-5 + 4 = -1$.

Answer: -1

12. Find the integer that completes $-6 + \square = 2$. [2 marks]

The move from -6 to 2 is $+8$.

Check $-6 + 8 = 2$.

Answer: 8

13. A lift starts at floor -3. It rises 8 floors, then falls 2 floors. Find its final floor. [3 marks]

After the rise: $-3 + 8 = 5$.

After the fall: $5 - 2 = 3$.

Answer: Floor 3

14. The morning temperature is -5°C and the afternoon temperature is 8°C. It then falls by 10°C at night. [4 marks]

(a) Find the morning-to-afternoon rise. [2 marks]

$8 - (-5) = 13$.

Answer: 13°C

(b) Find the night temperature. [2 marks]

$8 - 10 = -2$.

Answer: -2°C

15. An account starts with 15 dollars. A payment of 24 dollars is made, then 7 dollars is deposited. Its allowed minimum balance is -10 dollars. [5 marks]

(a) Find the balance after the payment and deposit. [3 marks]

$15 - 24 = -9$.

$-9 + 7 = -2$.

Answer: -2 dollars

(b) Find the greatest further whole-dollar payment allowed. [2 marks]

The difference from -2 down to -10 is 8.

Answer: 8 dollars