WONDERLEARNERZ PRIMARY ACADEMY â€" OFFICIAL ANSWER KEY & MARKING SCHEME

Maps, Locations, and Directions: Worksheet 3 [ANSWER KEY]

Grade 5 | Mathematics | Ch 18: Maps, Locations, and Directions | Total Marks: 19 | Time: 45 Minutes

Q1. On a standard grid map, which coordinate is traditionally written first? [1 Mark]

Correct Answer: The horizontal coordinate (X-axis)

Explanation: Coordinates are written (x, y) with horizontal along the corridor first, then vertical up the stairs.

Q2. If a map scale indicates 1 cm = 5 km, what actual distance on the ground is represented by 6 cm on the map? [1 Mark]

Correct Answer: 30 km

Explanation: 6 cm x 5 km/cm = 30 km.

Q3. Which compass direction lies exactly halfway between North and East? [1 Mark]

Correct Answer: North-East (NE)

Explanation: The 8-point compass intercardinal direction between North and East is North-East.

Q4. A hiker starts at (2, 3) and moves 4 units East and 3 units North. What are the new coordinates? [1 Mark]

Correct Answer: (6, 6)

Explanation: East increases x: 2 + 4 = 6. North increases y: 3 + 3 = 6. New position is (6, 6).

Q5. At the Harbor Marine Terminal, an aerial drone survey uses a grid map. The drone launches from Base at (1, 2) and flies to Station Alpha at (7, 10). What is the horizontal distance in grid units between Base and Station Alpha? [1 Mark]

Correct Answer: 6 units

Explanation: Horizontal distance = 7 - 1 = 6 units.

Q6. On a town map, a scale bar shows 1 cm = 250 meters. A delivery van travels along Main Street which measures 8 cm on the map. What is the real-world distance in kilometers? [1 Mark]

Correct Answer: 2 km

Explanation: 8 cm x 250 m = 2,000 meters. 2,000 m = 2 km.

Q7. A treasure hunter walks 50 meters North, turns 90Â° clockwise and walks 50 meters, turns 90Â° clockwise and walks 50 meters, and finally turns 90Â° clockwise and walks 50 meters. Where is the hunter relative to the start? [1 Mark]

Correct Answer: At the starting point

Explanation: The path traces a closed 50 m square (North, East, South, West), returning to the exact starting point.

Q8. Identify the direction: Directly opposite to South-West on an 8-point compass is [?]. [1 Mark]

Correct Answer: North-East

Explanation: Opposite to South is North, opposite to West is East -> North-East.

Q9. Map Scale Puzzle: Map distance = 4 cm, Real distance = 20 km. Scale: 1 cm = [?] km. [1 Mark]

Correct Answer: 5

Explanation: 20 / 4 = 5 km.

Q10. A student plots the point (4, 7) by counting 7 units along the horizontal x-axis and 4 units up the vertical y-axis. What error was made? [1 Mark]

Correct Answer: Reversed the x and y coordinates (should be 4 horizontal and 7 vertical)

Explanation: The first number is x (horizontal), the second is y (vertical). The student plotted (7, 4).

Q11. A scout claims: 'Facing East and making a 180Â° turn will leave me facing North.' **[1 Mark]**
Correct the scout's direction.
Correct Answer: West
Explanation: A 180Â° turn faces the exact opposite direction. Opposite of East is West.

Q12. Explain why maps include a scale bar and a North arrow (compass rose) to be **[2 Marks]**
practically useful for navigation.
Correct Answer: A scale bar allows users to convert paper measurements into real-world distances, while the North arrow provides directional orientation relative to the physical landscape.
Explanation: Scale provides proportional distance quantification; the orientation rose anchors spatial bearings.

Q13. Why is an 8-point compass rose more precise for navigation than a 4-point **[2 Marks]**
cardinal compass?
Correct Answer: An 8-point compass adds intercardinal bearings (NE, SE, SW, NW), dividing the 360Â° circle into 45Â° sectors rather than 90Â° sectors, doubling directional precision.
Explanation: Finer 45Â° angular resolution reduces trajectory drift in navigation.

Q14. On a topographical map, the scale is 1:50,000 (1 cm on the map = 50,000 cm in **[2 Marks]**
reality). How many kilometers does a 12 cm trail on the map represent on the ground?
Correct Answer: 6 km
Explanation: 12 cm x 50,000 = 600,000 cm. 600,000 cm / 100 = 6,000 m. 6,000 m / 1,000 = 6 km.

Q15. Three emergency response stations are located at A(2, 2), B(2, 8), and C(10, 2). **[2 Marks]**
If these three stations are connected by straight boundary fences, what is the area of the triangular zone enclosed?
Correct Answer: 24 square units
Explanation: Base (AC) = 10 - 2 = 8 units. Height (AB) = 8 - 2 = 6 units. Area of right triangle = 1/2 x base x height = 1/2 x 8 x 6 = 24 square units.