

y6maths2 Hard Answers

Answer Key

Question 1:

A point is located 4 units right and 3 units up from the origin. What are its coordinates? If it moves 2 units left and 5 units down, what are its new coordinates?

Answer: (4,3). After moving 2 left and 5 down: (2,-2).

Question 2:

Plot the points A(2,3), B(5,3), C(5,6), D(2,6) and connect them in order. What shape is formed? Calculate its perimeter if each unit is 1 cm.

Answer: Square. Side = 3 units. Perimeter = $4 \times 3 = 12$ cm.

Question 3:

A triangle has vertices at P(1,2), Q(7,2), and R(4,6). What is the area of this triangle? Show your method using the Cartesian plane.

Answer: Base = 6, height = 4. Area = $\frac{1}{2} \times 6 \times 4 = 12$ square units.

Question 4:

A square has one corner at (3,4) and side length 5 units. If the square is axis-aligned, list all four vertices.

Answer: (3,4), (8,4), (8,9), (3,9).

Question 5:

Point M is at (-3,5) and Point N is at (4,-2). How many units does it take to travel from M to N moving only horizontally and vertically?

Answer: Horizontal: 7 units. Vertical: 7 units. Total path: 14 units.

Question 6:

A rectangle has vertices at (2,1), (2,7), (10,1), and (10,7). What is its area? If you reflect it over the y-axis, what are the new coordinates?

Answer: Area = $8 \times 6 = 48$ sq units. Reflected: (-2,1), (-2,7), (-10,1), (-10,7).

Question 7:

A point has coordinates (-5,-3). Name the quadrant it is in. If reflected over the x-axis then the y-axis, where does it end up?

Answer: Quadrant III. After both reflections: (5,3).

Question 8:

Two points A(3,8) and B(3,2) are plotted. What is the distance between them? Find the midpoint coordinates.

Answer: Distance = 6 units. Midpoint = (3,5).

Question 9:

A line segment has endpoints (0,0) and (8,6). Calculate its exact length using the Pythagorean theorem.

Answer: $\sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ units.

Question 10:

An L-shaped polygon has vertices at (2,2), (2,8), (6,8), (10,8), (10,2), back to (2,2). Find its area.

Answer: L-shape. Area = $(4 \times 6) + (6 \times 6) = 24 + 36 = 60$ sq units.

Question 11:

A point at (6,9) is rotated 90° clockwise around the origin. What are its new coordinates?

Answer: 90° clockwise: (9,-6).

Question 12:

A parallelogram has vertices at (1,1), (4,3), (7,1), and (10,3). Find its base length, height, and area.

Answer: Base = $\sqrt{(7-1)^2 + (3-1)^2} = \sqrt{36+4} = \sqrt{40}$. Height = vertical rise / run. Area = 6 sq units.

Question 13:

A map uses a scale where 1 unit = 2 km. A straight path goes from (2,3) to (8,15). How far is the actual path in km?

Answer: $\sqrt{(8-2)^2 + (15-3)^2} = \sqrt{36+144} = \sqrt{180} = 13.4$ units. Actual = $13.4 \times 2 = 26.8$ km.

Question 14:

Plot points: (-2,3), (0,7), (2,11), (4,15). Describe the pattern. What are the coordinates of the 10th point?

Answer: x increases by 2, y increases by 4 each step. 10th point: (16,39).

Question 15:

Point X is at (-2,-6) and Y is at (4,-1). Find the midpoint. Give one possible coordinate for Z to form an isosceles triangle with XY as the base.

Answer: Midpoint = (1, -3.5). Possible Z: (4, -6) to make equal legs.