

Coordinate Plane (Four Quadrants)

Geometry · Grade 6

★ Hard · 10 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

1. Find the distance between $(-1, 3)$ and $(5, -5)$.

Answer: _____

2. The midpoint of segment AB is $(4, 1)$.
Point A is at $(1, -3)$. Find point B.

Answer: _____

3. On a grid, plot $A(-2,1)$, $B(4,1)$, $C(4,5)$.
Find the area of right triangle ABC.

Answer: _____

4. A rectangle has vertices $(1,1)$, $(7,1)$, $(7,4)$, $(1,4)$. Find its perimeter.

Answer: _____

5. A rectangle has vertices $(1,1)$, $(7,1)$, $(7,4)$, $(1,4)$. Find its area.

Answer: _____

6. Find the distance between $(-2, -3)$ and $(4, 5)$.

Answer: _____

7. Triangle has vertices $A(0, 0)$, $B(6, 0)$, $C(0, 8)$. Find its area.

Answer: _____

8. Point M is the midpoint of segment from $(-4, 2)$ to $(8, -4)$. Find M.

Answer: _____

9. Square has opposite vertices at $(1,1)$ and $(5,5)$. Find its area.

Answer: _____

10. Reflect $(3, 5)$ across the x-axis, then across the y-axis. Final coordinates?

Answer: _____

Answer Key

Coordinate Plane (Four Quadrants) — Hard

1. 10 units

$$d = \sqrt{[(5-(-1))]^2 + (-5-3)^2} = \sqrt{[36+64]} = \sqrt{100} = 10.$$

2. B = (7, 5)

$$\text{Midpoint: } ((1+x)/2, (-3+y)/2) = (4, 1). \text{ So } 1+x=8 \rightarrow x=7. -3+y=2 \rightarrow y=5.$$

3. 12 sq units

$$\text{Base } AB = 6. \text{ Height} = 5-1=4. \text{ Area} = \frac{1}{2} \times 6 \times 4 = 12.$$

4. 18 units

$$\text{Length} = 7-1=6. \text{ Width} = 4-1=3. P = 2(6+3) = 18 \text{ units}.$$

5. 18 sq units

$$\text{Length} = 6, \text{ Width} = 3. \text{ Area} = 6 \times 3 = 18 \text{ sq units}.$$

6. 10 units

$$d = \sqrt{[(4-(-2))]^2 + (5-(-3))^2} = \sqrt{[36+64]} = \sqrt{100} = 10.$$

7. 24 sq units

$$\text{Right triangle: legs 6 and 8. Area} = \frac{1}{2} \times 6 \times 8 = 24 \text{ sq units}.$$

8. (2, -1)

$$M = ((-4+8)/2, (2+(-4))/2) = (4/2, -2/2) = (2, -1).$$

9. 16 sq units

$$\text{Side} = 5-1=4. \text{ Area} = 4 \times 4 = 16 \text{ sq units}.$$

10. (-3, -5)

$$\text{Across } x: (3, -5). \text{ Then across } y: (-3, -5).$$