

GRADE 8 MATHEMATICS

Coordinate Geometry

Complete Printable Worksheet Pack

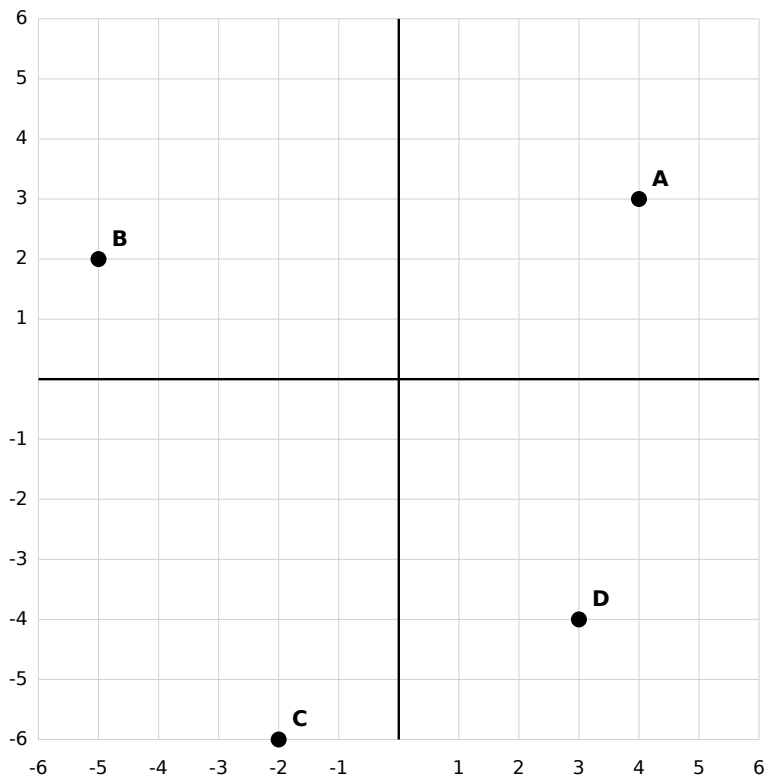
6 Practice Worksheets • 6 Answer Keys

Coordinates • Quadrants • Distance • Shapes • Transformations

Name: _____ Date: _____

Worksheet 1 — Coordinates & Quadrants

Use the coordinate grid where provided. Show calculations clearly.



1. State the coordinates of the origin.
2. In which quadrant is $(4, 3)$?
3. In which quadrant is $(-5, 2)$?
4. In which quadrant is $(-2, -6)$?
5. In which quadrant is $(3, -4)$?
6. Which point lies on the x-axis: $A(5, 0)$, $B(0, 5)$, $C(-2, 4)$?
7. Which point lies on the y-axis: $P(0, -7)$, $Q(7, 0)$, $R(-3, -2)$?
8. Reflect the point $(4, -2)$ across the x-axis. Give the new coordinates.
9. Reflect the point $(-3, 5)$ across the y-axis.
10. Challenge: A point is in Quadrant III and has coordinates $(-7, y)$. Give two possible integer values of y .

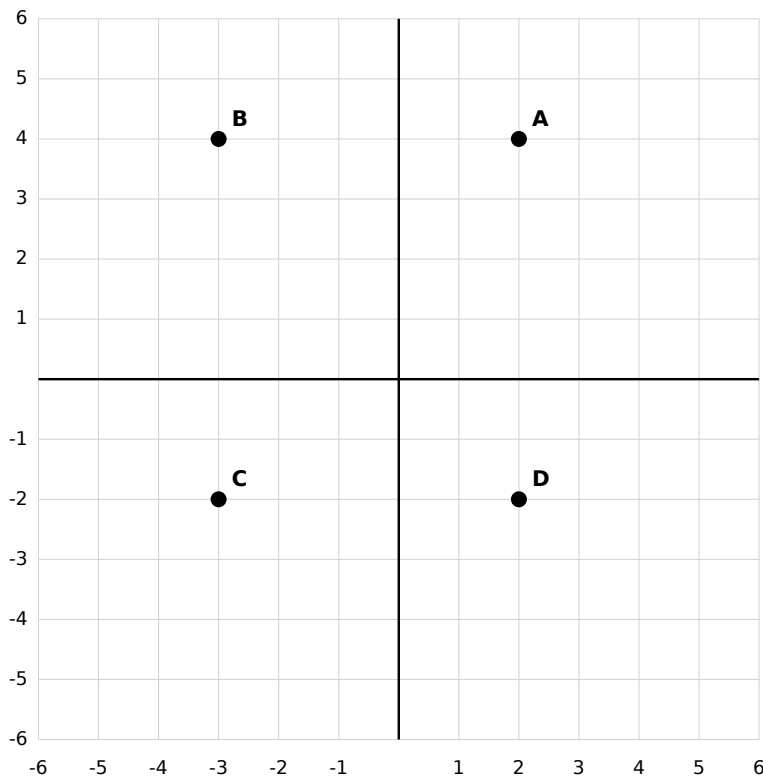
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Answer Key 1 — Coordinates & Quadrants

1. $(0, 0)$
2. Quadrant I
3. Quadrant II
4. Quadrant III
5. Quadrant IV
6. $A(5, 0)$
7. $P(0, -7)$
8. $(4, 2)$
9. $(3, 5)$
10. Any two negative integers, e.g. -1 and -4

Worksheet 2 — Plotting & Reading Coordinates

Use the coordinate grid where provided. Show calculations clearly.



1. Plot $A(2, 4)$, $B(-3, 4)$, $C(-3, -2)$, and $D(2, -2)$. What shape is formed?
2. Find the coordinates of the point directly below $(4, 5)$ on the x-axis.
3. Find the coordinates of the point directly left of $(-2, 6)$ on the y-axis.
4. A point moves from $(1, 2)$ to $(1, 7)$. How many units did it move?
5. A point moves from $(-4, 3)$ to $(5, 3)$. How many units did it move?
6. Which points are the same distance from the y-axis: $(3, 4)$, $(-3, 2)$, $(5, 1)$?
7. Which point is closest to the origin: $(2, 2)$, $(1, 4)$, $(-3, 1)$?
8. Plot $E(-5, -1)$, $F(-1, -1)$, $G(-1, 4)$, $H(-5, 4)$. What is the perimeter?
9. Explain how the signs of x and y coordinates identify a quadrant.
10. Challenge: Give four points that form a square with side length 4 and centre at the origin.

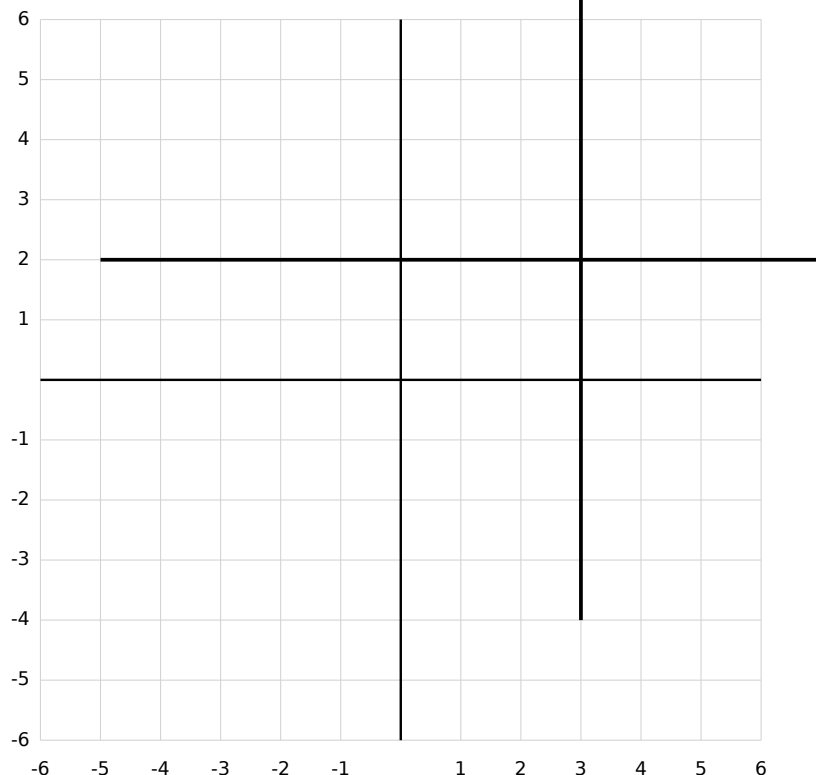
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Answer Key 2 — Plotting & Reading Coordinates

1. Rectangle
2. $(4, 0)$
3. $(0, 6)$
4. 5 units
5. 9 units
6. $(3, 4)$ and $(-3, 2)$
7. $(2, 2)$
8. 18 units
9. QI $+, +$; QII $-, +$; QIII $-, -$; QIV $+, -$
10. Example: $(2, 2)$, $(-2, 2)$, $(-2, -2)$, $(2, -2)$

Worksheet 3 — Distance, Midpoints & Horizontal/Vertical Lines

Use the coordinate grid where provided. Show calculations clearly.



1. Find the horizontal distance between $(-3, 4)$ and $(5, 4)$.
2. Find the vertical distance between $(2, -5)$ and $(2, 7)$.
3. Find the midpoint of $(2, 4)$ and $(8, 4)$.
4. Find the midpoint of $(-6, 3)$ and $(2, 3)$.
5. Find the midpoint of $(-4, -2)$ and $(-4, 8)$.
6. The endpoints of a horizontal segment are $(-5, 2)$ and $(7, 2)$. Find its length.
7. The endpoints of a vertical segment are $(3, -4)$ and $(3, 9)$. Find its length.
8. One endpoint is $(-2, 5)$ and the midpoint is $(4, 5)$. Find the other endpoint.
9. One endpoint is $(3, -6)$ and the midpoint is $(3, 1)$. Find the other endpoint.
10. Challenge: The midpoint of $A(-5, 2)$ and $B(x, 2)$ is $(1, 2)$. Find x .

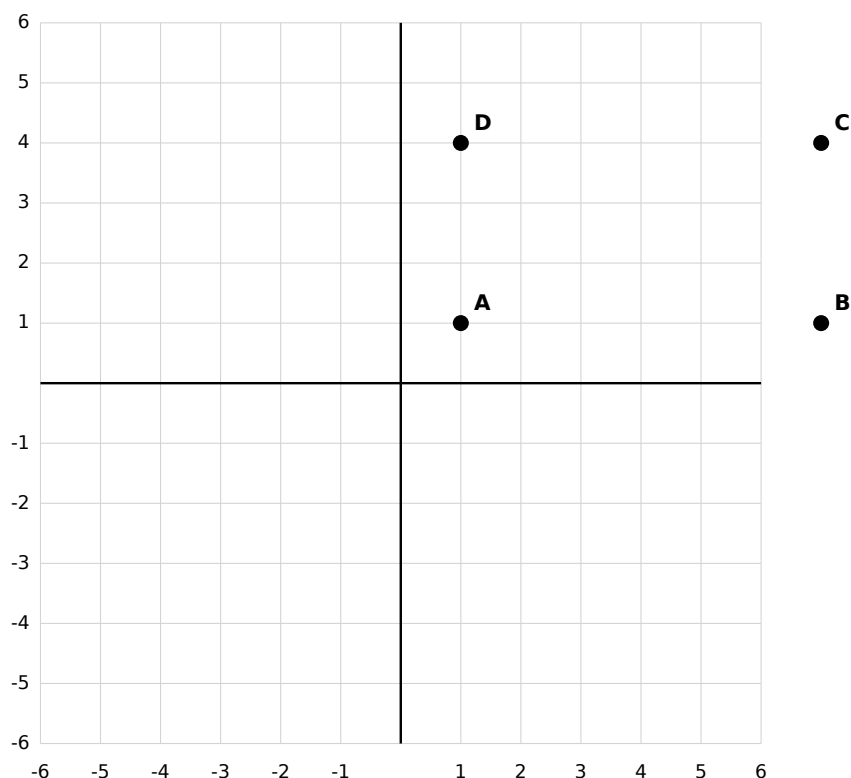
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Answer Key 3 — Distance, Midpoints & Horizontal/Vertical Lines

1. 8 units
2. 12 units
3. (5, 4)
4. (−2, 3)
5. (−4, 3)
6. 12 units
7. 13 units
8. (10, 5)
9. (3, 8)
10. $x = 7$

Worksheet 4 — Coordinate Geometry & Shapes

Use the coordinate grid where provided. Show calculations clearly.



1. Find the perimeter of the rectangle with vertices $(1, 1)$, $(7, 1)$, $(7, 4)$, $(1, 4)$.
2. Find the area of the rectangle in Q1.
3. Find the side length of the square with vertices $(-2, -2)$, $(2, -2)$, $(2, 2)$, $(-2, 2)$.
4. Find the perimeter of that square.
5. Points $A(0, 0)$, $B(6, 0)$, $C(6, 4)$, $D(0, 4)$ form a rectangle. Find its area.
6. A triangle has vertices $(0, 0)$, $(6, 0)$, and $(3, 4)$. Find its base and height.
7. Find the area of the triangle in Q6.
8. A rectangle has one vertex at $(-4, -3)$, width 8 units horizontally and height 5 units vertically. Give the other three vertices.
9. Explain how you can find the area of a rectangle from coordinates without using a ruler.
10. Challenge: A rectangle has vertices $(-6, -2)$, $(2, -2)$, $(2, 5)$, $(-6, 5)$. Find its area and perimeter.

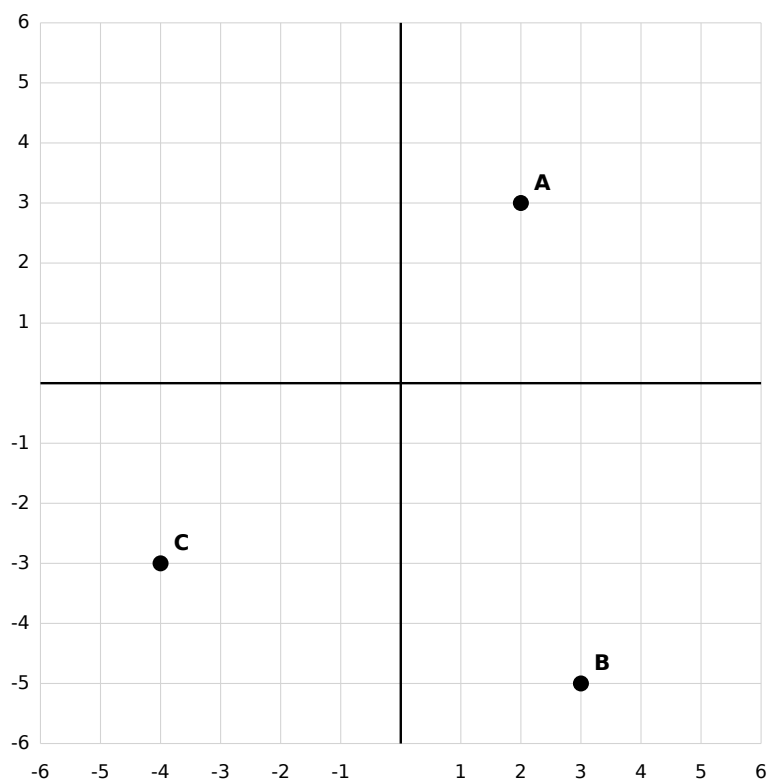
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Answer Key 4 — Coordinate Geometry & Shapes

1. 18 units
2. 18 square units
3. 4 units
4. 16 units
5. 24 square units
6. Base = 6, height = 4
7. 12 square units
8. $(4, -3)$, $(4, 2)$, $(-4, 2)$
9. Find horizontal and vertical side lengths from coordinate differences, then multiply.
10. Area = 56 square units; perimeter = 30 units

Worksheet 5 — Transformations on the Coordinate Plane

Use the coordinate grid where provided. Show calculations clearly.



1. Translate (2, 3) 4 units right. Give the new coordinates.
2. Translate (−5, 1) 3 units left.
3. Translate (4, −2) 5 units up.
4. Translate (−1, 6) 4 units down.
5. Reflect (3, −5) across the x-axis.
6. Reflect (−7, 2) across the y-axis.
7. Reflect (−4, −3) in the origin.
8. A point moves from (2, −1) to (−2, −1). Describe the transformation.
9. A rectangle has vertices (1,1), (5,1), (5,3), (1,3). Translate it 3 units left and 2 units up. Give all new vertices.
10. Challenge: A point (x, y) is reflected across the x-axis and then the y-axis. Write the final coordinates in terms of x and y.

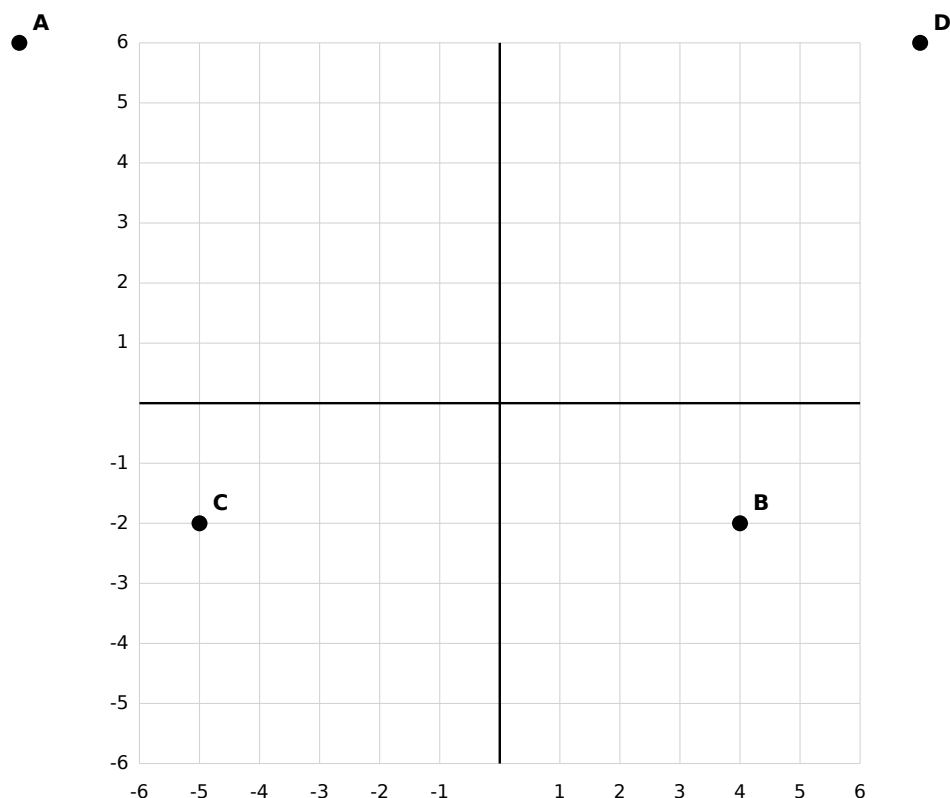
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Answer Key 5 — Transformations on the Coordinate Plane

1. $(6,3)$
2. $(-8,1)$
3. $(4,3)$
4. $(-1,2)$
5. $(3,5)$
6. $(7,2)$
7. $(4,3)$
8. 4 units left
9. $(-2,3)$, $(2,3)$, $(2,5)$, $(-2,5)$
10. $(-x, -y)$

Worksheet 6 — Coordinate Geometry Challenge

Use the coordinate grid where provided. Show calculations clearly.



1. Find the midpoint of $A(-8, 6)$ and $B(4, -2)$.
2. Find the horizontal and vertical distances between $(-7, -3)$ and $(5, 4)$.
3. A rectangle has opposite vertices $(-5, -2)$ and $(7, 6)$, with sides parallel to the axes. Find its area.
4. Find the perimeter of the rectangle in Q3.
5. A square has centre $(0,0)$ and side length 10. Give one possible set of four vertices.
6. Triangle $A(-2,1)$, $B(4,1)$, $C(1,5)$ is translated 3 units right and 2 units down. Give the new coordinates.
7. A point P is reflected across the y -axis to $P'(-6, 4)$. Find P .
8. The midpoint of $A(-3, 7)$ and $B(x, -1)$ is $(2, 3)$. Find x .
9. Explain why a horizontal line has the same y -coordinate at every point.
10. Challenge: A rectangle has area 72 square units and vertices $(-2, -1)$, $(x, -1)$, $(x, 8)$, $(-2, 8)$. Find x and the perimeter.

Working space:

Answer Key 6 — Coordinate Geometry Challenge

1. $(-2, 2)$
2. Horizontal = 12 units; vertical = 7 units
3. Width = 12, height = 8, area = 96 square units
4. 40 units
5. Example: $(5,5)$, $(-5,5)$, $(-5,-5)$, $(5,-5)$
6. $(1,-1)$, $(7,-1)$, $(4,3)$
7. $P = (6,4)$
8. $x = 7$
9. Moving horizontally changes x but not y
10. Height = 9, so width = 8; $x = 6$; perimeter = 34 units