

# Coordinate Plane and Distance Foundations

Reading points, horizontal and vertical distance, midpoint intuition, and simple geometry on the grid.

Name \_\_\_\_\_ Date \_\_\_\_\_

32 main 2-up grid 2 pages

### Completion Reward



Shown here as a small pack artifact, not a preview destination.

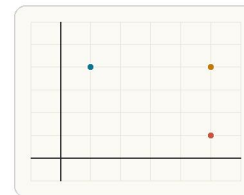
1. What ordered pair names the origin on the coordinate plane?

- A. (0, 0)
- B. (1, 0)
- C. (0, 1)
- D. (-1, -1)

2. What is the distance between a point and itself?

- A. 1
- B. The x-coordinate
- C. 0
- D. The y-coordinate

3. What ordered pair names the origin?



The origin is the point where the x-axis and y-axis intersect, so its coordinates are (0, 0).

- A. (1, 0)
- B. (0, 1)
- C. (0, 0)
- D. (-1, -1)

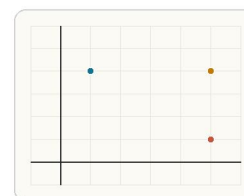
4. Which signs describe a point in Quadrant II?

- A. Positive x and positive y
- B. Negative x and negative y
- C. Negative x and positive y
- D. Positive x and negative y

5. If a point lies on the x-axis, what must be true?

- A. Its x-coordinate is 0
- B. Both coordinates are equal
- C. Its x-coordinate is negative
- D. Its y-coordinate is 0

6. If two points have the same y-coordinate, what kind of segment do they form?



If two points have the same y-coordinate, the segment between them is horizontal.

- A. A vertical segment
- B. A diagonal segment
- C. A horizontal segment
- D. A ray

7. If two points have the same x-coordinate, what kind of segment do they form?

- A. A horizontal segment
- B. A ray
- C. A vertical segment
- D. A circle

8. Which signs describe a point in Quadrant III?

- A. Negative x and negative y
- B. Negative x and positive y
- C. Positive x and negative y
- D. Positive x and positive y

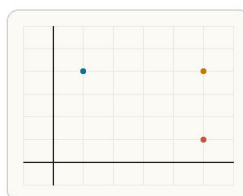
9. In the ordered pair (4, -3), which coordinate is read first?

- A. The y-coordinate
- B. They are read together
- C. The x-coordinate
- D. The negative sign

10. What is true about every point on the y-axis?

- A. Its x-coordinate is 0
- B. Its y-coordinate is 0
- C. Both coordinates are positive
- D. Its slope is 1

11. In the diagram, what point names B?



On the coordinate plane, move horizontally first to read x and then vertically to read y.

- A. (4, 5)
- B. (5, 1)
- C. (1, 5)
- D. (5, 4)

12. If two points have the same x-coordinate, what kind of segment do they form?

- A. A vertical segment
- B. A horizontal segment
- C. A diagonal segment
- D. No segment at all

**13. If two points have the same y-coordinate, what kind of segment do they form?**

- A. A vertical segment
- B. A diagonal segment
- C. A ray
- D. A horizontal segment

**14. Which point lies in Quadrant IV?**

- A. (-5, 2)
- B. (5, -2)
- C. (-5, -2)
- D. (5, 2)

**15. What is the best next step to find the midpoint of two points?**

- A. Add the coordinates straight across
- B. Average the x-coordinates and average the y-coordinates
- C. Subtract the second point from the first point
- D. Multiply the x-coordinates and y-coordinates

**16. A student sees a point 4 right and 2 up, then writes (2, 4). What is the mistake?**

- A. They should have used negative coordinates
- B. They reversed x and y
- C. They forgot the parentheses
- D. There is no mistake

**17. A student sees a point 4 units right and 2 units up, then writes (2, 4). What is the mistake?**

- A. They forgot to make both coordinates negative
- B. They reversed x and y
- C. They should have written a fraction
- D. There is no mistake

**18. Find the distance between (2, 5) and (8, 5). Answer with a number.**

**19. Find the distance between (3, 1) and (3, 9). Answer with a number.**

**20. How far apart are (-2, 4) and (3, 4) horizontally? Answer with a number.**

**21. How far apart are (1, -3) and (1, 5) vertically? Answer with a number.**

**22. How far apart are (-4, -1) and (-4, 6) vertically? Answer with a number.**

**23. How far apart are (0, 2) and (7, 2) horizontally? Answer with a number.**

**24. Find the midpoint of (2, 4) and (8, 4). Answer as an ordered pair.**

**25. Find the midpoint of (-4, 2) and (2, 2). Answer as an ordered pair.**

**26. Why is horizontal or vertical distance easy to find on a coordinate grid?**

- A. You can compare one coordinate while the other coordinate stays the same
- B. Every segment on the grid has the same length
- C. The slope is always 1
- D. Coordinates only work for triangles

**27. What is the midpoint of the segment from (2, 4) to (8, 4)? Give the x-coordinate only. Answer with a number.**

**28. What is the midpoint of the segment from (3, 1) to (3, 9)? Give the y-coordinate only. Answer with a number.**

**29. A rectangle has vertices (1, 1), (6, 1), (6, 4), and (1, 4). What is its perimeter? Answer with a number.**

**30. A rectangle has vertices (1, 1), (6, 1), (6, 4), and (1, 4). Find its perimeter. Answer with a number.**

**31. A rectangle has vertices (1, 1), (6, 1), (6, 4), and (1, 4). Find its area. Answer with a number.**

**32. Find the midpoint of (2, 6) and (8, 10). Answer as an ordered pair.**