

# COORDINATE GEOMETRY REFERENCE

## The Cartesian Plane System

Lesson: 4.2  
Grade Level: 8-10

**Y-AXIS X-AXIS** QUADRANT I (+,+) QUADRANT II (-,+) QUADRANT III (-,-) QUADRANT IV (+,-)

## Key Formulas

### Slope (m):

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

### Distance:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

### Midpoint:

$$M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

## Vocabulary

- **Origin:** The center point (0,0)
- **Ordered Pair:** (x, y) coordinates
- **Abscissa:** The x-value
- **Ordinate:** The y-value
- **Intercept:** Where a line crosses an axis

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