Distance, Midpoint, Equation Formats

The Formulae

Distance

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

Midpoint

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

Slope

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

Equation formats

Standard

$Ax + By = C$

- A, B, and C are all integers
- A must be positive

Point-Slope

$y - y_0 = m(x - x_0)$

- m is the slope
- (x_0, y_0) is any point on the line

Slope-Intercept

$y = mx + b$

- m is the slope
- b is the y intercept

Horizontal Line

$y = k$

- k is a number
- Slope = 0

Vertical Line

$x = k$

- k is a number
- Slope = undefined