

STRAIGHT LINE FORMULA

$$y = y(x) = mx + b$$

SLOPE FORMULA

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

POINT-SLOPE FORMULA

$$y - y_1 = m (x - x_1)$$

DISTANCE BETWEEN A PAIR OF POINTS FORMULA

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

MIDPOINT ON LINE FORMULA

$$m = \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}$$

LINES PARALLEL to $y = mx + b$

have *SAME* slope, different 'b'

(Family of Parallel curves $\rightarrow y = mx + c$ for all 'c')

LINES PERPENDICULAR to $y = mx + b$

have *inverted* (1/m) slope

(Family of Perpendicular curves $\rightarrow y = (1/m)x + c$ for all 'c')