

Linear Formulas Practice

Slope - Intercept : $y = mx + b$
slope \downarrow m intercept \leftarrow b

Point - Slope : $y = m(x - x_1) + y_1$
slope \downarrow m point \nearrow (x_1, y_1)

Slope Formula : $m = \frac{y_2 - y_1}{x_2 - x_1}$
slope \uparrow m

Ex slope = -4 goes through $(5, -13)$
 x_1, y_1

$$y = -4(x - 5) + (-13)$$
$$y = -4x + 20 - 13$$
$$y = -4x + 7$$

Ex. slope is 2, goes through $(5, 9)$

$$y = 2(x - 5) + 9 \leftarrow \text{"point-slope"}$$
$$y = 2x - 10 + 9$$

$$y = 2x - 1 \leftarrow \text{"slope-intercept"}$$

Ex $(-4, 10)$ and $(6, 5)$

$$m = \frac{5 - 10}{6 - (-4)} = \frac{-5}{10} = -\frac{1}{2}$$

$$y = -\frac{1}{2}(x - 6) + 5$$
$$y = -\frac{1}{2}x + 3 + 5$$
$$y = -\frac{1}{2}x + 8$$