

Point Slope Eq: $y = y_1 + m(x - x_1)$

Finding Equations in point slope and slope intercept form Given 2 Points:

Use the information below to write a linear equation.

A. $(5, 3) \& (4, 5)$

Slope = $m = \frac{3-5}{5-4} = \frac{-2}{1} = -2$

$(5, 3)$ $m = -2$
 x_1, y_1

$y = y_1 + m(x - x_1)$
 $y = 3 + -2(x - 5)$
 $y = 3 - 2(x - 5)$
 $y = 3 - 2x + 10$

$y = -2x + 13$

Use the information below to write a linear equation.

A. $(2, 7) \& (1, -4)$
 $\frac{7 - (-4)}{2 - 1}$
 $m = 11$

$y = 7 + 11(x - 2)$

$y = 7 + 11x - 22$

$y = 11x - 15$

C. $(-3, 6) \& (-3, -2)$

$m = \frac{6 - (-2)}{-3 - (-3)} = \frac{8}{0}$ slope is undefined

B. $(6, -4) \& (-3, 5)$
x is positive
 x_1, y_1

$m = \frac{-4 - 5}{6 - (-3)} = \frac{-9}{9} = -1$

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

$y = -4 - 1(x - 6)$

$y = -4 - 1x + 6$

$y = -1x + 2$

B. $(6, -3) \& (-2, -3)$

$m = \frac{-3 - (-3)}{6 - (-2)} = \frac{0}{8} = 0$

$y = -3 + 0(x - 6)$

$y = -3$ Horizontal

Vertical Line
 $x = -3$