## Point-Slope Form of a Linear Equation 21

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

therefore,

$y_2 - y_1 = m(x_2 - x_1)$

Substitute (x,y) for $x_1$ and $y_1$

$y_2 - 4 = 5(x_2 - 3)$

Remove the subscripts

$y - 4 = 5(x - 3)$

Solve for y

$y - 4 = 5x - 15$

$y = 5x - 11$

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

put y here, put m here, put x here

Example:
goes through (3 , 4)
has slope 5

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13.) $(\overset{x}{8}, \overset{y_1}{13})$ $m = -9$

$y - \square = \square(x - \square)$

$y - 13 = -9(x - 8)$

$y - 13 = -9x + 72$

$+13 \quad +13$

$y = -9x + 85$

44.) $(-1, 3)$ $(-6, -7)$

$m = \frac{-7-3}{-6-1} = \frac{-10}{-5} = 2$

$y - \square = \square(x - \square)$

$y - 3 = 2(x + 1)$

$y - 3 = 2x + 2$

$y = 2x + 5$

$-2x \quad -2x$

$-2x + y = 5$