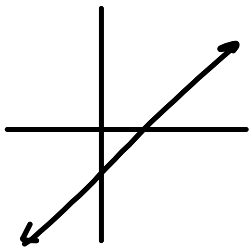
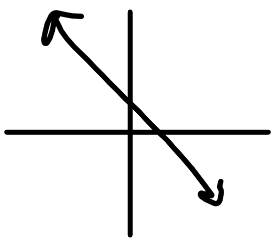
Slope of a line.

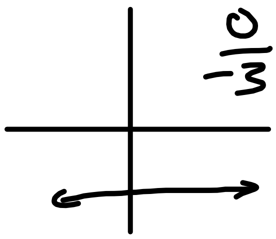
$$m = \frac{y_1 - y_2}{x_1 - x_2}$$



positive slope

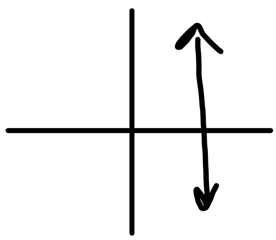


negative slope



$\frac{0}{-3} = 0$

zero slope



undefined

$\frac{4}{0} = \text{und}$

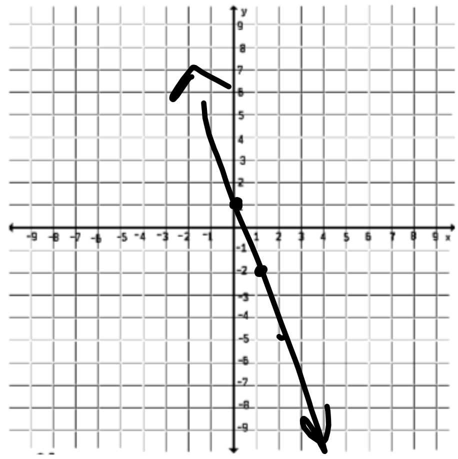
Graph using the slope intercept form of an equation.

$$y = mx + b$$

$y = -3x + 1$

$b = 1$

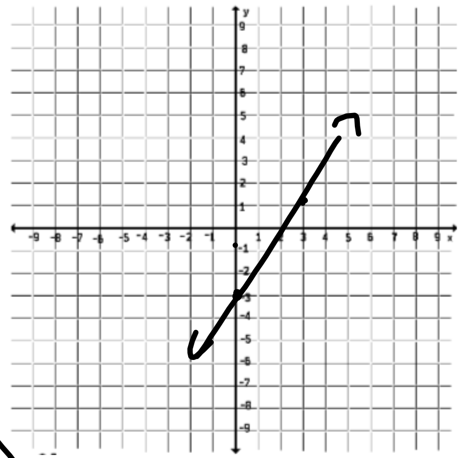
$m = \frac{-3}{1}$



$4x - 3y = 9$

$\frac{-3y}{-3} = \frac{-4x}{-3} + \frac{9}{-3}$

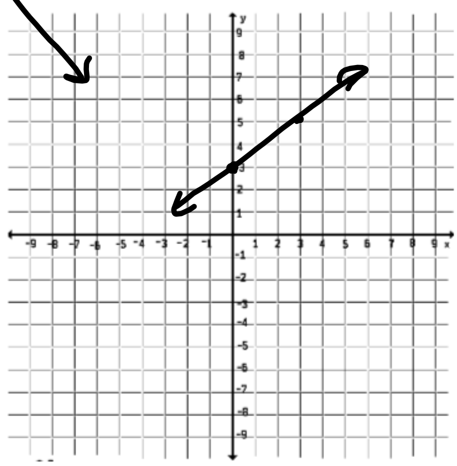
$y = \frac{4}{3}x - 3$



$-2x = -3y + 9$

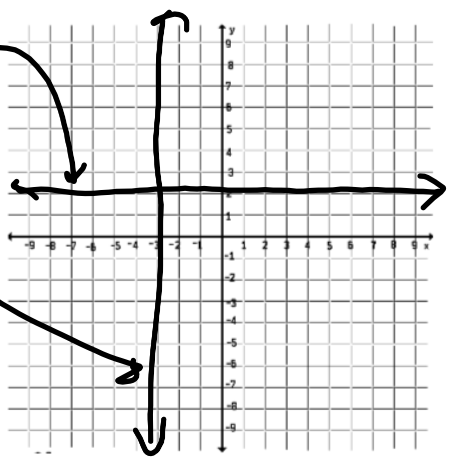
$\frac{3y}{3} = \frac{2x}{3} + \frac{9}{3}$

$y = \frac{2}{3}x + 3$

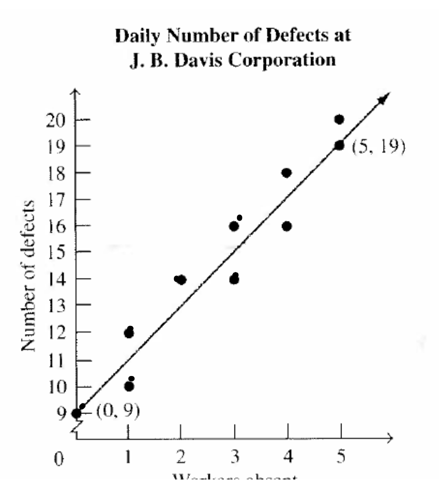


$y = 2$

$x = -3$



103. ***Determining the Number of Defects*** The graph on the top of page 375 shows the daily number of workers absent from the assembly line at J. B. Davis Corporation and the number of defects coming off the assembly line for 8 days. (The two points indicated on the line do not represent any of the 8 days.) The line of best fit, the blue line on the graph, can be used to approximate the number of defects coming off the assembly line per day for a given number of workers absent.



a) Determine the slope of the line of best fit using the two points indicated. $m = \frac{19-9}{5-0} = \frac{10}{5} = 2$

b) Using the slope determined in part (a) and the y-intercept, (0, 9), determine the equation of the line of best fit. $y = 2x + 9$

c) Using the equation you determined in part (b), determine the approximate number of defects for a day if 3 workers are absent. $y = 2(3) + 9 = 15$

d) Using the equation you determined in part (b), approximate the number of workers absent for a day if there are 17 defects that day.

$17 = 2x + 9$

$8 = 2x$

$4 = x$