: pg 281-282 : 1-7, 14, 19, 24, 25, 35, 37, 39, 40, 41, 42

1. $y - y_1 = m(x - x_1)$
2. $y + 1 = 3(x - 2)$
3. $y - 4 = 4(x - 3)$
4. $y + 7 = -2(x + 5)$
5. $y - 4 = \frac{1}{2}(x - 3)$
6. $y + 5 = \frac{2}{3}(x - 1)$
7. $y - 2 = 3(x - 2)$
19. $y + 4 = -(x - 4)$

24. $y - 3 = -6(x + 4)$
25. $y - 4 = 6(x + 3)$
35. $y = 2x - 2$
37. $y = \frac{1}{3}x - \frac{8}{3}$
39. $y = -9x - 5$
40. $y = \frac{1}{2}x - 14$
41. $y = 2x - 1$
42. $y = \frac{2}{3}x + 1$

(42) $(3, 3)$ from the other Graph

$m = \frac{2}{3}$

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

5.3 Writing Linear Equations w/ 2 Points

Mar. 08, 2007

tell Me about Slope

$$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

Write the equ. of the line in S-I form, $y = mx + b$ (Slope-Intercept) that passes through $(-4, 5)$ (x_1, y_1) & $(0, 2)$ (x_2, y_2)

Need the Slope $\frac{-3}{4}$

Need the y-int. 2

Sometimes you get these both, Sometimes you do not!

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - 5}{0 + 4} = \frac{-3}{4}$$

$$y = \frac{-3}{4}x + 2$$

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

$$y - 5 = \frac{-3}{4}(x + 4)$$

$$y - 5 = \frac{-3}{4}x + \frac{-3}{3}$$

$+5 \quad +5$

$$y = \frac{-3}{4}x + 2$$

$$y - 2 = \frac{-3}{4}(x - 0)$$

$$y - 2 = \frac{-3}{4}x$$

$+2$

$$y = \frac{-3}{4}x + 2$$

Write in S-I form the equ. passing through

$(3, -5), (7, 0)$

x_1, y_1 $\quad$ x_2, y_2

Our Process

2 Pts → slope → Pt-Slope Form → Slope Int form

$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$

$m = \frac{0 + +5}{7 - 3} = \boxed{\frac{5}{4}}$

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

$y - 0 = \frac{5}{4}(x - 7)$

$\frac{5}{4} \cdot \frac{(7)}{1} = \frac{35}{4}$

$\boxed{y = \frac{5}{4}x - \frac{35}{4}}$

$y + +5 = \frac{5}{4}(x - 3)$

$y + 5 = \frac{5}{4}x - \frac{15}{4} - \frac{20}{4}$

$-\frac{20}{4}$

$\boxed{y = \frac{5}{4}x - \frac{35}{4}}$

Recall: to Add or Subt Fractions they Both must have the Same Denom.

S-I form : $(0,2),(4,-2)$

x_1, y_1 $\quad x_2, y_2$

$$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$b = 2$

$$m = \frac{-2-2}{4-0} = \frac{-4}{4} = -1$$

$y = mx + b$

$y = -1x + 2$

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

$y - 2 = -1(x - 0)$

$y - 2 = -1x$

$+2 \qquad +2$

$y = -1x + 2$

S-I form: $(3,-1)$, $(4,2)$ — x_1, y_1 — x_2, y_2

2 Pts $\Rightarrow$ Slope $\rightarrow$ Pt-Slope $\Rightarrow$ Slope-Int.

$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1} =$

$m = \frac{2+1}{4-3} = \frac{3}{1} = \boxed{3}$ $\quad y - y_1 = m(x - x_1)$

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

$y + 1 = 3x - 9$

$-1 \quad -1$

$\boxed{y = 3x - 10}$

$y - 2 = 3(x - 4)$

$y - 2 = 3x - 12$

$+2 \quad +2$

$\boxed{y = 3x - 10}$

.

0 T.L.

1 Write Summary Box on Pg 287 in Notes

2 Pg 288-289: 1-8(a), 10, 12, 16, 17, 23, 33-35(a)

3 If not already have wk. sts. 5.3 & 5.4 1-12 Both sides on 1 done!