

Revised

Name _____

Date _____

Notes:

point slope form

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

1) $(2, 1)$ $m = 3$

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

point

slope form

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

$$y - 1 = 3x - 6$$

+1

+1

slope intercept form

$$y = 3x - 5$$

2)

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

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

$$y + 5 = -2(x - -3)$$

$$y + 5 = -2(x + 3)$$

$$y + 5 = -2x - 6$$

-5

-5

$$y = -2x - 11$$

3) $(-4, 11)$ $m = \frac{3}{4}$

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

$$y - 11 = \frac{3}{4}(x - (-4))$$

$$y - 11 = \frac{3}{4}(x + 4)$$

$$y - 11 = \frac{3}{4}x + 3$$

$$\boxed{y = \frac{3}{4}x + 14}$$

$$\frac{3}{4} \cdot \frac{4}{1} = \frac{12}{4} = 3$$

4) $(0, -3)$ $m = -\frac{2}{3}$

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

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

$$y + 3 = -\frac{2}{3}x + 0$$

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

$$5) \quad \begin{array}{c} x_1 \quad y_1 \\ (1, 3) \end{array} m = 5$$

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

$$y - 3 = 5(x - 1)$$

$$\begin{array}{r} y - 3 = 5x - 5 \\ + 3 \quad \quad + 3 \end{array}$$

$$\boxed{y = 5x - 2}$$

$$6) \quad \begin{array}{c} x_1 \quad y_1 \\ (4, 6) \end{array} m = 2$$

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

$$y - 6 = 2(x - 4)$$

$$\begin{array}{r} y - 6 = 2x - 8 \\ + 6 \quad \quad + 6 \end{array}$$

$$\boxed{y = 2x - 2}$$

$$7) \quad \begin{array}{c} x_1 \quad y_1 \\ (5, 7) \end{array} m = 3$$

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

$$y - 7 = 3(x - 5)$$

$$\begin{array}{r} y - 7 = 3x - 15 \\ + 7 \quad \quad + 7 \end{array}$$

$$\boxed{y = 3x - 8}$$

8)

9) $(1, -3) (3, 3)$ $m = 3$

$$y = mx + b$$

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

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

$$y - 3 = 3x - 9$$

$$y = 3x - 6$$

10) $(x_1, y_1) (x_2, y_2)$
 $(4, 0) (-2, 1)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 0}{-2 - 4} = \frac{1}{-6}$$

$$(4, 0) \quad m = -\frac{1}{6}$$

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

$$y - 0 = -\frac{1}{6}(x - 4)$$

$$y = -\frac{1}{6}x + \frac{4}{6}$$

$$y = -\frac{1}{6}x + \frac{2}{3}$$

$$\frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

$$12) (-3, -2) (5, 3)$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - (-2)}{5 - (-3)} = \frac{5}{8}$$

$$(-3, -2) \quad m = \frac{5}{8}$$

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

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

$$y + 2 = \frac{5}{8}x + \frac{15}{8}$$

$$y = \frac{5}{8}x - \frac{1}{8}$$

$$\frac{5}{8} \cdot \frac{3}{1} = \frac{15}{8}$$

$$\begin{array}{r} \frac{15}{8} \\ - \frac{2 \times 8}{1 \times 8} = \frac{-16}{8} \\ \hline \end{array}$$

$$\frac{-1}{8}$$

Point slope

13) $(1, 3)$ $m = 5$

point slope formula

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

$$y - 3 = 5(x - 1)$$

$$y - 3 = 5x - 5$$

$$y = 5x - 2$$

13) $(-3, -5)$ $m = -2$

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

$$y - -5 = -2(x - -3)$$

$$y + 5 = -2(x + 3)$$

$$y + 5 = -2x - 6$$

$$y = -2x - 11$$