Geometry

Ch. 3 Handout 3.6

Lines in the Coordinate plane

Formula to use to write a Linear Equation

Pull

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

m = slope

point = (x_1, y_1)

need to know slope and point

Pull

4. Write an equation point-slope form of the line with slope -8 that contain P(3, -6). Write the final equation in slope-intercept form.

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

$m = -8$ $\quad y - (-6) = -8(x - 3)$

$pt = (3, -6)$ $\quad y + 6 = -8x + 24$

$-6 \qquad -6$

$y = -8x + 18$

5. Write an equation using point-slope form of the lin that contains the points G(4, -9) and H(-1, 1). Write the final equation in slope-intercept form

$x_1, y_1 \quad x_2, y_2$

$(4,-9) \quad (-1,1)$

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

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

$m = \frac{10}{-5}$

$m = -2$

$m = -2$

pt: $(-1,1)$ (x_1, y_1)

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

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

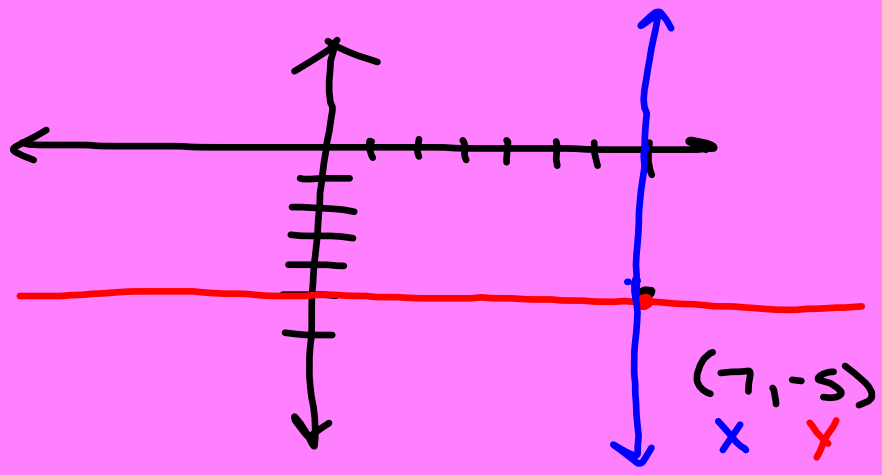
$y - 1 = -2(x + 1)$

$y - 1 = -2x - 2$

$+1 \quad +1$

$y = -2x - 1$

6. Write equations for the horizontal line and the vertical line that contain A(7, -5).



Horizontal Line

$y = -5$

Vertical line

$x = 7$

7. Write an equation of the line with slope -1 that contains the point P(2, -4). Write the final equation in slope-intercept form.

$m = -1$

$P + (2, -4)$ (x_1, y_1)

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

$y - (-4) = -1(x - 2)$

$y + 4 = -x + 2$

$-4 \quad\quad -4$

$y = -x - 2$

8. Write an equation of the line that contains the points P(5, 0) and Q(7, -3). Write the final equation in slope-intercept.

(x_1, y_1) (x_2, y_2)

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

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

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

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

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

(x_1, y_1)

$(5, 0)$

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

$$y - 0 = -\frac{3}{2}(x - 5)$$

$$y = -\frac{3}{2}x + \frac{15}{2}$$

Assignment:

Pgs 169-170 17-32,55,61,62,64,66-68