Write the equation of the line that passes through each pair of points. Give your answer in Slope-Intercept Form.

1. $(5, 24)$ and $(-3, -32)$

Method 1

$$\frac{-56}{-8} \quad \frac{(-32 - 24)}{-3 - 5} = m$$

$$y - 24 = 7(x - 5)$$

$$y - 24 = 7x - 35$$

$$+24 \qquad +24$$

$$\boxed{y = 7x - 11}$$

Method 2

$$m = 7$$

$$y = mx + b \qquad \boxed{y = 7x - 11}$$

$$y = 7x + b$$

$$24 = 7(5) + b$$

$$24 = 35 + b$$

$$-35 \quad -35$$

$$-11 = b$$

2. $(10, -1)$ and $(-5, 5)$

$$m = \frac{5 - (-1)}{-5 - 10} = \frac{-6}{15} \rightarrow \frac{-2}{5}$$

$$= y - (-1) = -\frac{2}{5}(x - 10) \qquad \frac{-2}{5}x - \frac{-10}{1} = 5$$
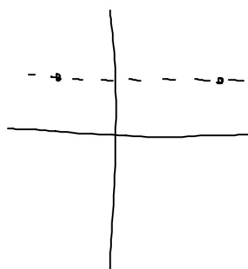
$$\boxed{y = -\frac{2}{5}x + 3}$$

3. $(7, \underline{3})$ and $(-2, 3)$

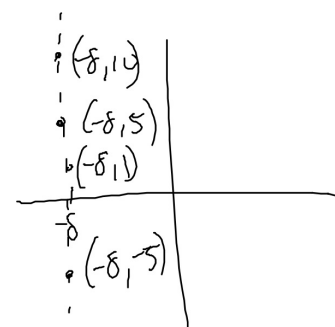$$m = \frac{3 - 3}{7 - -2} = \frac{0}{9} = 0 \qquad y - 3 = 0(x - 7)$$
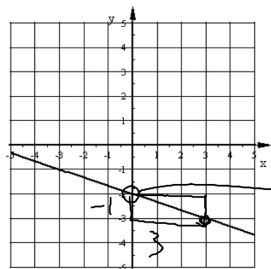
$$y - 3 = 0$$

$$\boxed{y = 3} \qquad\qquad y = 3$$

4. $(\underline{-8}, 10)$ and $(\underline{-8}, 1)$

m is undefined

$$x = -8$$

$(-8, 10)$
$(-8, 5)$
$(-8, 1)$
$(-8, -5)$

5.

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