

8)  $(2, -4)$  PARALLEL TO  
 $y = 5x - 1$

STEP 1: FIND  $m$

(a) WRITE GIVEN LINE IN SLOPE INTERCEPT FORM

$$y = 5x - 1$$

(b) IDENTIFY SLOPE  
 SLOPE = 5

(c) PARALLEL LINES HAVE SAME SLOPE SO  
 $m = 5$

STEP 2:  $y = mx + b$

$$-4 = 5(2) + b$$

$$-4 = 10 + b$$

$$-4 - 10 = b$$

$$-14 = b$$

STEP 3:  $y = mx + b$

$$y = 5x - 14$$

9)  $(-1, -2)$  PARALLEL TO  
 $2x - 7y = 21$

STEP 1: (a)  $2x - 7y = 21$

$$2x - 21 = 7y$$

$$\frac{2}{7}x - \frac{21}{7} = \frac{7}{7}y$$

$$\frac{2}{7}x - 3 = y$$

(b) SLOPE =  $\frac{2}{7}$

(c)  $m = \frac{2}{7}$

STEP 2:  $y = mx + b$

$$-2 = \frac{2}{7}(-1) + b$$

$$-2 = -\frac{2}{7} + b$$

$$-2 + \frac{2}{7} = b$$

$$-\frac{12}{7} = b$$

STEP 3:

$$y = mx + b$$

$$y = \frac{2}{7}x - \frac{12}{7}$$

10)  $(3, 5)$  PERP. TO  
 $y = \frac{1}{5}x - 1$

STEP 1: FIND  $m$

(a)  $y = \frac{1}{5}x - 1$

(b) SLOPE =  $\frac{1}{5}$

(c) PERP LINES HAVE SLOPES THAT ARE NEGATIVE RECIPROCALLS

$$m = -5$$

STEP 2:  $y = mx + b$

$$5 = -5(3) + b$$

$$5 = -15 + b$$

$$5 + 15 = b$$

$$20 = b$$

STEP 3:  $y = mx + b$

$$y = -5x + 20$$

11)  $(-4, 2)$  PERP. TO  $5x - 2y = 3$

STEP 1: FIND  $m$

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

$$5x - 3 = 2y$$

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

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

(b) SLOPE =  $\frac{5}{2}$

(c)  $m = -\frac{2}{5}$

STEP 2:  $y = mx + b$

$$2 = -\frac{2}{5}(-4) + b$$

$$2 = \frac{8}{5} + b$$

$$2 - \frac{8}{5} = b$$

$$\frac{2}{5} = b$$

STEP 3:  $y = mx + b$

$$y = -\frac{2}{5}x + \frac{2}{5}$$