

9.2 HW Writing Equations of Lines

Name Key

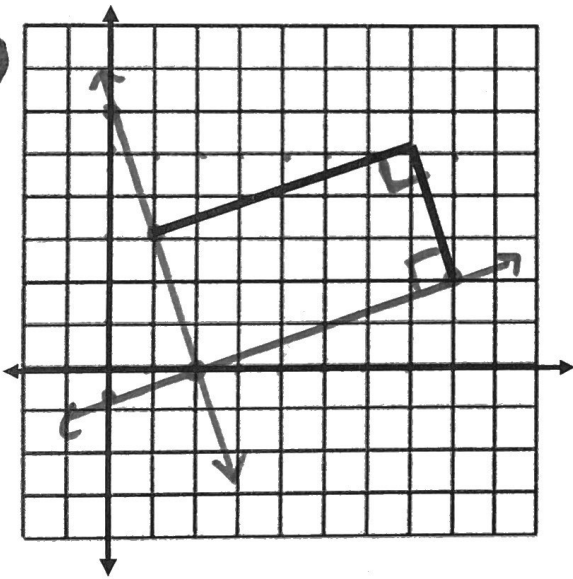
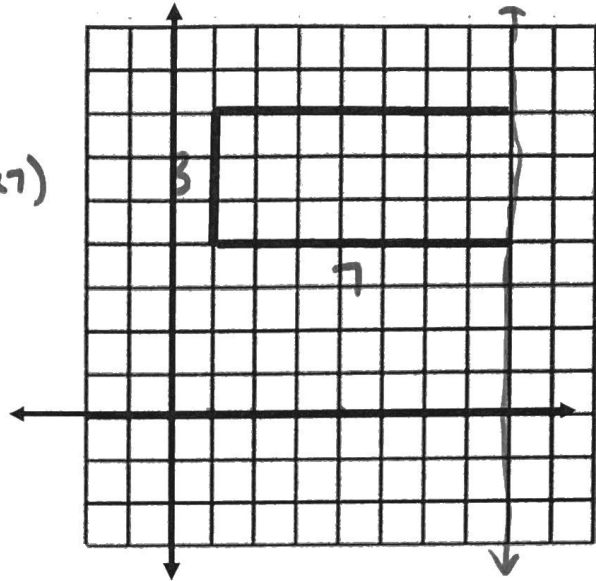
Write the equation of the line(s) needed to complete the parallelogram.

1.  $m = \underline{\text{undefined}}$

Equation =  $x = 8$

What is the area of this figure?  $21 \text{ u}^2$   $(3 \times 7)$

What is its perimeter?  $20 \text{ units}$   
 $(3+3+7+7)$



2.  $m_1 = \underline{\frac{1}{3}}$   $m = \frac{1}{3} (8, 2)$

Equation<sub>1</sub> =  $y = \frac{1}{3}x - \frac{2}{3}$

$m_2 = \underline{-3}$

Equation<sub>2</sub> =  $y = -3x + 6$

$$2 = \frac{1}{3}(8) + b$$

$$2 = \frac{8}{3} + b$$

$$-\frac{8}{3} - \frac{8}{3}$$

$$\underline{-\frac{2}{3} = b}$$

$$m: -3 (1, 3)$$

$$3 = -3(1) + b$$

$$3 = -3 + b$$

$$+3 +3$$

$$\underline{6 = b}$$

What type of parallelogram is this?

Rectangle  
(slopes are opp. rec.)

3. Write the equation of the line that passes through (4, -2) and (-1, 5).

$m: \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 + 2}{-1 - 4} = \frac{7}{-5}$   $-2 = \frac{7}{-5}(4) + b$

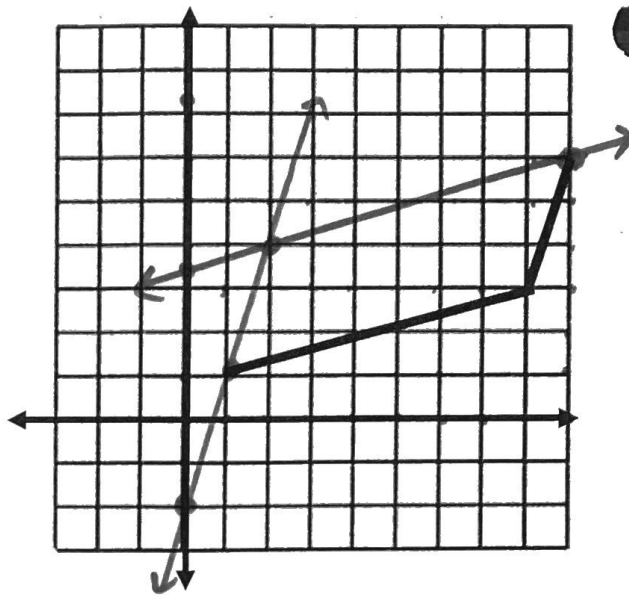
$y = -\frac{7}{5}x + 3.6$

$3.6 = b$

Write the equations of the lines needed to complete the parallelogram:

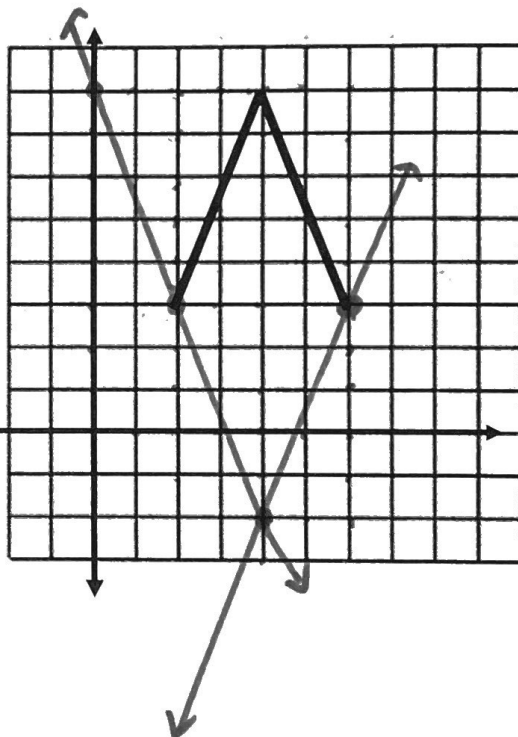
4.  $m_1 = \frac{2}{7}$   $m: \frac{2}{7} (9, 6)$   
 $b = \frac{2}{7}(9) + b$   
 Equation<sub>1</sub> =  $y = \frac{2}{7}x + 3.42$   $b = 3.42$

$m_2 = 3$   $m: 3 (1, 1)$   
 $1 = 3(1) + b$   
 $1 = 3 + b$   
 $\begin{array}{r} -3 \\ -3 \\ \hline -2 = b \end{array}$   
 Equation<sub>2</sub> =  $y = 3x - 2$



5.  $m_1 = \frac{5}{2}$   $m: \frac{5}{2} (6, 3)$   
 $3 = \frac{5}{2}(6) + b$   
 $b = -12$   
 Equation<sub>1</sub> =  $y = \frac{5}{2}x - 12$

$m_2 = -\frac{5}{2}$   $m: -\frac{5}{2} (2, 3)$   
 $3 = -\frac{5}{2}(2) + b$   
 $8 = b$   
 Equation<sub>2</sub> =  $y = -\frac{5}{2}x + 8$



What type of parallelogram is this?

Rhombus  
 (all sides  $\cong$ )

6. Write the equation of the line that passes through  $(-2, 7)$  and is parallel to  $y = -x/3 + 7/3$

$m: -\frac{1}{3} (-2, 7)$   
 $7 = -\frac{1}{3}(-2) + b$   
 $7 = \frac{2}{3} + b$   $b = \frac{19}{3}$   
 $y = -\frac{1}{3}x + \frac{19}{3}$

7. Write the equation of the line that passes through  $(1, -4)$  and is perpendicular to  $y = 4x + 7.3$

$m: -\frac{1}{4} (1, -4)$   
 $-4 = -\frac{1}{4}(1) + b$   
 $-4 = -\frac{1}{4} + b$   $-3.75 = b$   
 $-\frac{1}{4} + \frac{1}{4}$   
 $y = -\frac{1}{4}x - 3.75$