

**Review Test**

Show all needed work, and if necessary, write an explanation in words.

1. Solve for  $x$  and round to 2 decimal places.

$$8(-2x - \sqrt{3}) = 4(7x + \frac{19}{4})$$

(51) Change to decimals

$$8(-2x - 1.73) = 4(7x + 4.75)$$

(52) Distribute.

$$-16x - 13.84 = 28x + 19$$

(53) Get  $x$ 's together

$$+16x \quad +16x$$

$$-13.84 = 44x + 19$$

(54) Solve 2 step<sup>s</sup>

$$-19 \quad -19$$

$$\frac{-32.84}{44} = \frac{44x}{44}$$

$x = -0.75$

2. Given  $f(x) = 6x - 2$ , answer the following.

*foo is y.*

a). What is the slope of the line given?

6

b). What is the slope of a line parallel to  $f$ ?

6

c). What is the slope of a line perpendicular to  $f$ ?

$-\frac{1}{6}$

d). Write an equation of a line that is **parallel** to  $f$  that passes through  $(-5, 1)$

$$y = mx + b$$

$$1 = -5(6) + b$$

$y = 6x + 31$

$$1 = -30 + b$$

$$+30 \quad +30$$

$$31 = b$$

e). Write an equation of a line that is **perpendicular** to  $f$  that passes through  $(-5, 1)$

$$y = mx + b$$

$$1 = 5(-\frac{1}{6}) + b$$

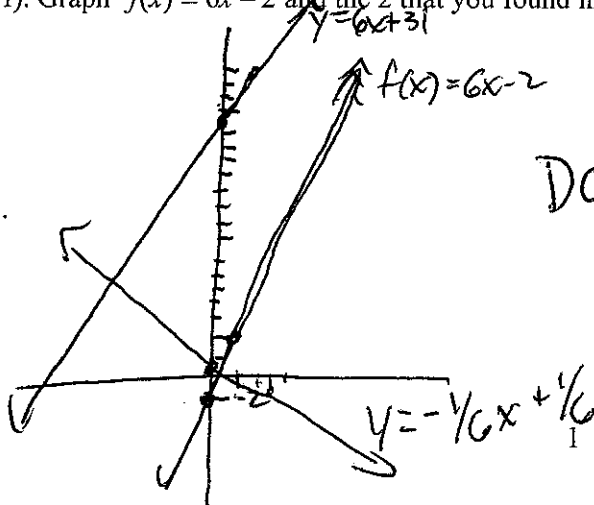
$y = -\frac{1}{6}x + \frac{1}{6}$

$$1 = \frac{5}{6} + b$$

$\frac{1}{6} = b$

$$-\frac{5}{6} \quad -\frac{5}{6}$$

f). Graph  $f(x) = 6x - 2$  and the 2 that you found in parts d and e.



Does your lines look parallel and/or perpendicular?

3. Use  $y = +\frac{7}{5}|x-4|+3$  to answer the following questions.

a) Find the values for  $x$  when  $y=9$ .

*x is opposite*

$$9 = -\frac{7}{5}|x-4| + 3$$

$$-5 \cdot 6 = -7|x-4|$$

$$-30 = -7|x-4|$$

$$\frac{+30}{7} = |x-4|$$

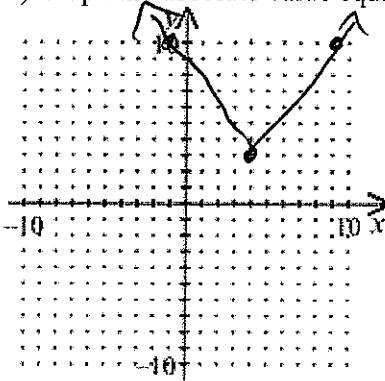
$$\frac{30}{7} = x-4$$

$$\frac{-30}{7} = x-4$$

$$\boxed{\frac{58}{7} = x}$$

$$\boxed{-\frac{2}{7} = x}$$

b) Graph the absolute value equation.



*opposite*  
 $x \rightarrow +2$   
 $y \rightarrow +5$

c) If I wanted to move  $y = -\frac{7}{5}|x-4|+3$  left 2 and up 5, what numbers would I change? What would the new equation look like.

$$y = -\frac{7}{5}|x-2|+8$$

Since  $h$  moves  $x$ , I can change  $h$  to go left +2. Same with  $k$  and how it effects  $y$ .

4. Use  $-3x + 2y < 10$  to answer the following questions.

a) Find the value for  $x$  when  $y = -2$ .

$$-3x + 2(-2) < 10$$

$$-3x - 4 < 10$$

$$-3x < 14$$

$$\frac{-3x}{-3} < \frac{14}{-3}$$

$$x > -4.67$$

b) Solve  $-3x + 2y < 10$  for  $y$ .

$$2y < \frac{3x+10}{2}$$

$$\boxed{y < \frac{3}{2}x + 5}$$

c) Graph the inequality in 2 variable.

