

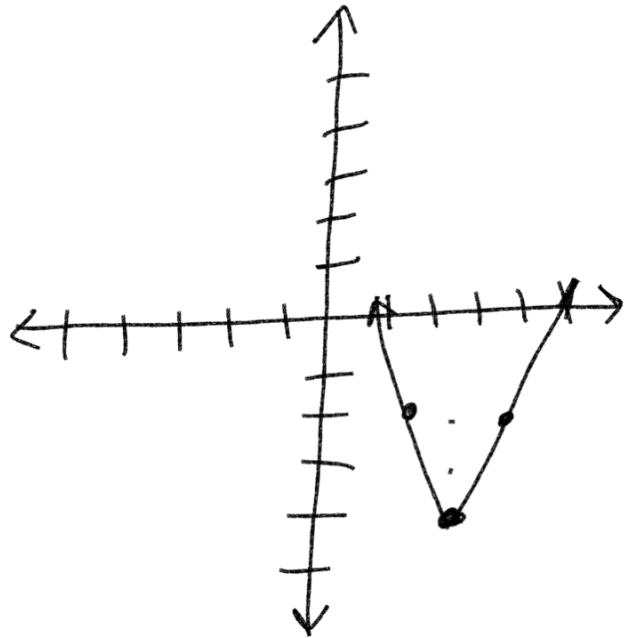
Review

$$y = |(-2)x + 6| - 4$$

\swarrow \swarrow
 -2 -2

$$y = |-2(x - 3)| - 4$$

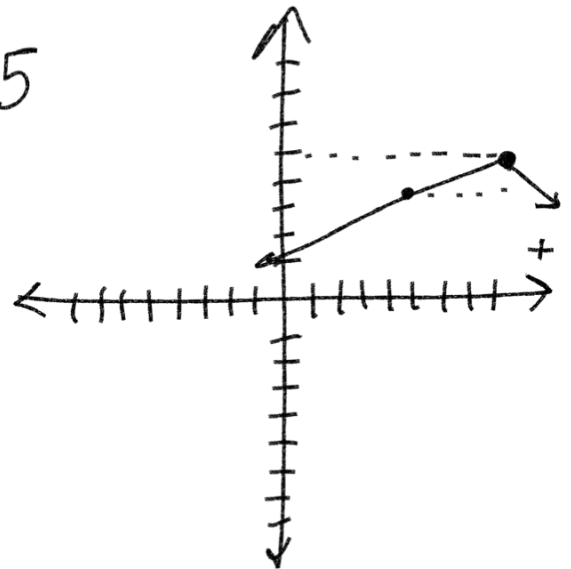
only flip if - is on the outside



$$y = -|\frac{1}{4}x - 2| + 5$$

$$y = \text{flip} \left(\frac{1}{4} \right) (x - 8) + 5$$

opposite right 8 up 5



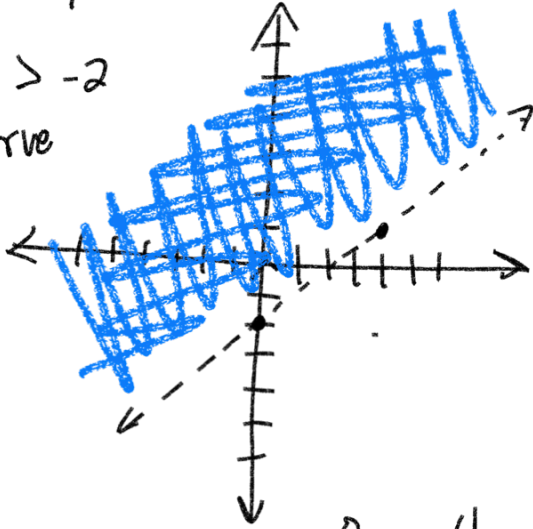
$$y > \frac{3}{4}x - 2$$

$(0,0)$ Ori
 (0,0) Ori

$$0 > \frac{3}{4}(0) - 2$$

$$0 > -2$$

true



$$8x - 4y = 16$$

$$(0, -4)$$

$$(2, 0)$$

$$0 \geq -4$$

true

$$\boxed{y \geq 2x - 4}$$

$$\{ 8x - 4y \leq 16 \}$$

$(0,0)$
 Ori

$$0 \leq 16$$

$(0,0)$

$$8(0) - 4(0) \leq 16$$

$$0 \leq 16 \text{ true}$$

$$8x - 4y \leq 16$$

$$-8x$$

$$-8x$$

$$\frac{-4y}{-4} \leq \frac{8x + 16}{-4}$$

$$f(x) = x^2 - 4x + 5$$

$$f(3) = (3)^2 - 4(3) + 5$$

$$9 - 12 + 5$$

$$-3 + 5$$

$$\boxed{2}$$

input-
output

$$\frac{g(x)}{f(x)} = \frac{x^2 + 6}{3x - 5} = 0$$

$$3x - 5 \neq 0$$

$$\frac{3x}{3} \neq \frac{5}{3}$$

$$\boxed{x \neq \frac{5}{3}}$$

4. a) $(-2, 4)$ $m = -3$

slope-intercept
 $y = mx + b$

$$4 = (-3)(-2) + b$$

$$4 = 6 + b$$

$$-6 \quad -6$$

$$-2 = b$$

$y = mx + b$
 $y = -3x - 2$

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

$$y - 4 = -3(x - (-2))$$

$$y - 4 = -3(x + 2)$$

$$y - 4 = -3x - 6$$

$$+4 \quad +4$$

$$y = -3x - 2$$

6.) a) $(-5, 3)$ and $(7, -1)$

slope = $\frac{y_2 - y_1}{x_2 - x_1}$ $\frac{\text{Rise}}{\text{run}}$

$$\frac{-1 - 3}{7 - (-5)} = \frac{-4}{7 + 5} = \frac{-4}{12} = \boxed{-\frac{1}{3}}$$

Equation $(-2, 7)$ parallel to $y = -2x + 5$
 parallel lines \rightarrow have equal slopes

Point-Slope

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

slope for a parallel line $= -2$
 perpendicular lines \rightarrow opposite inverse

$$y - 7 = -2(x - (-2))$$

slope $-\frac{2}{1}$ opposite $\frac{2}{1}$ inverse $\left(\frac{1}{2}\right)$

$$y - 7 = -2x - 4$$

$$+7 \quad +7$$

$$y = -2x + 3$$

slope for a perpendicular line $= \left(\frac{1}{2}\right)$

Direct Variation

$$y = kx$$

$$y = kx$$

If $y = 12$ when $x = 3$

$$k = \frac{y}{x} = \frac{12}{3}$$

$$k = \frac{12}{3}$$

$$k = \frac{12}{3}$$

Find y when $x = 9$

$$y = 4(9)$$

$$k = 4$$

$$y = 4x$$

$$y = 36$$

