

w-AZ Algebra 2 Week 12

1.) a)  $f(x) = 2x^2 - 8x + 12$

$f(6) = 2(6)^2 - 8(6) + 12$        $f(6) = 36$

$2(36) - 8(6) + 12$

$72 - 48 + 12$

$24 + 12 = \boxed{36}$

$f(x) = \frac{-3x^2 + 6x}{8}$        $x = 4$

$\frac{-3(4)^2 + 6(4)}{8} = \frac{-3(16) + 6(4)}{8}$

$\frac{-48 + 24}{8} = \frac{-24}{8} = -3$

$f(4) = -3$

$f(x) = 2x - 6$        $g(x) = x^2 - 3$

$\frac{g(3)}{f(4)} = \frac{x^2 - 3}{2x - 6} = \frac{(3)^2 - 3}{2(4) - 6} = \frac{9 - 3}{8 - 6} = \frac{6}{2} = \boxed{3}$

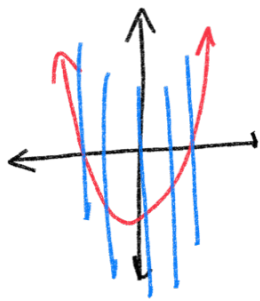
for what value of  $x$  will it not be a function?

$\frac{x^2 - 3}{2x - 6}$

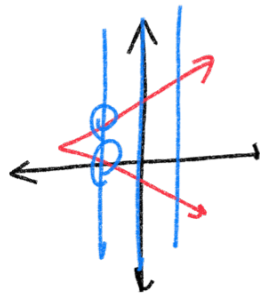
$2x - 6 \neq 0$   
+6 +6

denominator = 0  
undefined  $\leftarrow f(3)$

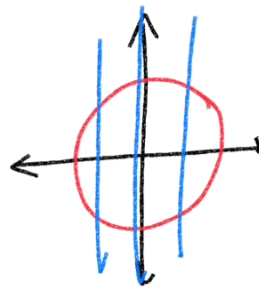
$\frac{2x}{2} \neq \frac{6}{2} \quad x \neq 3$



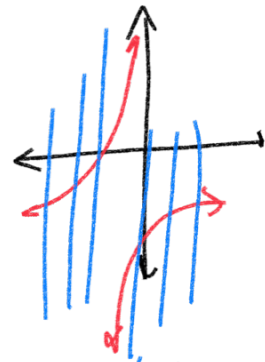
function



not function



not function



function

$x_1, y_1$   
 $(-3, 8)$

$m = -2$

slope-intercept

point-slope

$y = mx + b$

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

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

$y - 8 = -2(x + 3)$

$y - 8 = -2x - 6 + 8$

$y = -2x + 2$

A B C  
 $3x - 6y = 18$

$Ax + By = C$

$3x - 6y = 18$   
 $-3x \quad -3x$

$\frac{-6y}{-6} = \frac{-3x + 18}{-6}$

$y = \left(\frac{1}{2}\right)x - 3$

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

$0 = \frac{1}{2}x - 3$

$2(3) = \left(\frac{1}{2}x\right) \cdot 2$

$x = 6$

slope =  $\frac{1}{2}$   
 $\left(\frac{-A}{B}\right) = -\left(\frac{3}{-6}\right) = \frac{3}{6} = \frac{1}{2}$   
 x-intercept = 6  $\left(\frac{C}{A}\right) = \frac{18}{3}$   
 y-intercept = -3  $\left(\frac{C}{B}\right) = \frac{18}{-6}$

$3x - 6y = 18$

$\frac{3x}{3} = \frac{18}{3}$

$x = 6$

$3x - 6y = 18$

$\frac{-6y}{-6} = \frac{18}{-6}$

$y = -3$

$$\begin{array}{r} -8x + 2y = 16 \\ +8x \end{array}$$

$$\frac{2y}{2} = \frac{8x+16}{2}$$

$$y = 4x + 8$$

$$\text{slope} = 4$$

$$x\text{-int} = -2$$

$$y\text{-int} = 8$$

$$\frac{-8x}{-8} = \frac{16}{-8}$$

Find the slope

$$\begin{pmatrix} x_2 \\ y_2 \end{pmatrix} \\ (6, 2)$$

$$\begin{pmatrix} x_1 \\ y_1 \end{pmatrix} \\ (4, -8)$$

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

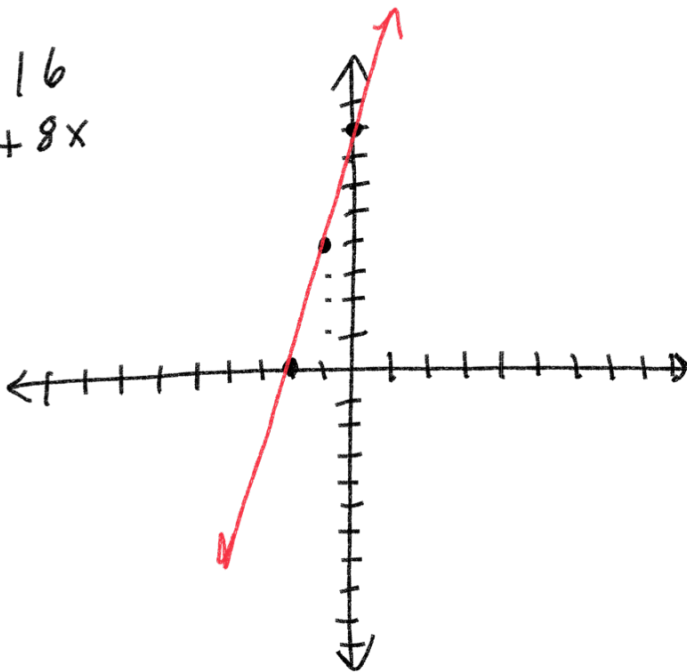
$$\frac{2 - (-8)}{6 - 4} = \frac{2 + 8}{6 - 4} = \frac{10}{2}$$

$$= 5$$

$$\begin{array}{r} -8x + 2y = 16 \\ +8x \end{array}$$

$$\frac{2y}{2} = \frac{8x+16}{2}$$

$$y = 4x + 8$$



parallel lines have equal slopes

perpendicular lines have opposite inverse slopes

Write an equation for a line that went through  $(-2, 4)$  that was parallel to  $\{y = 3x + 8\}$   $m = 3$

point-slope  $y - y_1 = m(x - x_1)$   
 $y - 4 = 3(x - (-2))$   
 $y - 4 = 3(x + 2)$

Direct Variation

$$y = kx$$

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

if  $y = 8$  when  $x = 12$

$$k = \frac{8}{12} = \frac{2}{3}$$

Find  $y$  when  $x = 18$

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

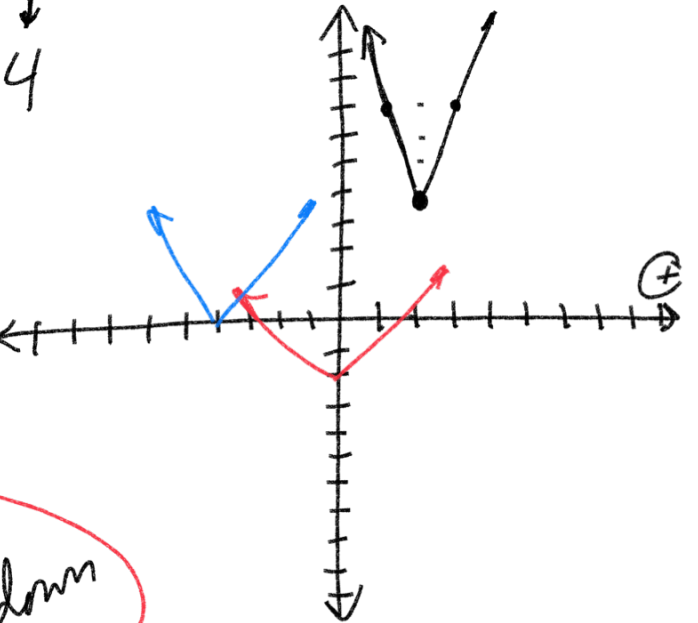
$$y = \frac{2}{3}(18) = \frac{36}{3} = 12$$

$$y = \left| \frac{3}{3}x - \frac{6}{3} \right| + 4$$

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

slope  
up 3  
1 over

right  
2



$$y = |x| - 2$$

shift down 2

$$y = |x+4|$$

$$y > 2x - 2$$

dashed

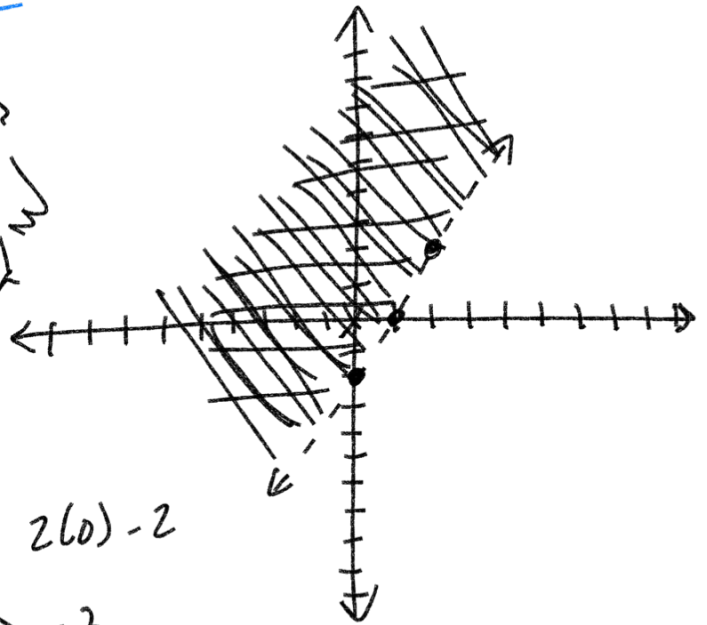
≥  
full

Test

$$0 > 2(0) - 2$$

$$0 > -2$$

True



HW

Ch 2 Pre-Test

Optional Online HW 12  
(Fri-ish)

Ch 2 Test

due December 23<sup>rd</sup>