

# Quiz Review

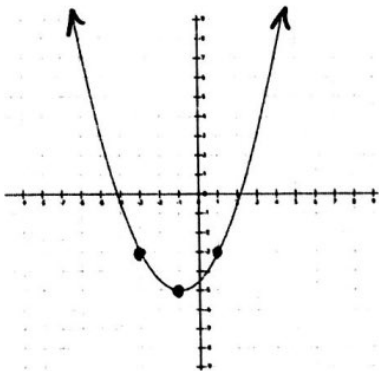
## 2.7 Inverse of a Function - Worksheet

MCR3U

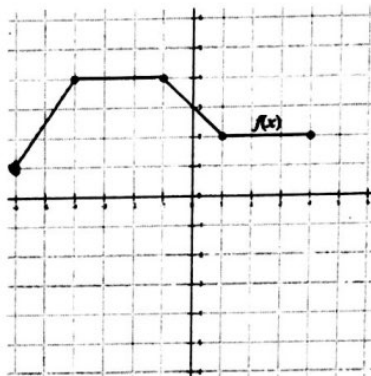
Jensen

1) Sketch the graph of the inverse of each function. Is the inverse of  $f(x)$  a function? Explain.

a)



b)



2) Determine the equation of the inverse of each function.

a)  $f(x) = 2x$

b)  $f(x) = 6x - 5$

c)  $f(x) = \frac{2x+4}{5}$

3) Determine the equation of the inverse of each function

a)  $f(x) = x^2 + 6$

b)  $f(x) = (x + 8)^2$

c)  $f(x) = \sqrt{x} - 3$

d)  $f(x) = \sqrt{x+1}$

4) For each quadratic function, complete the square and then determine the equation of the inverse.

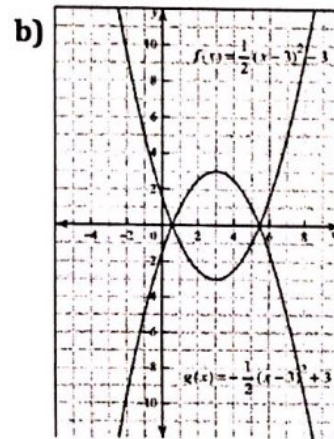
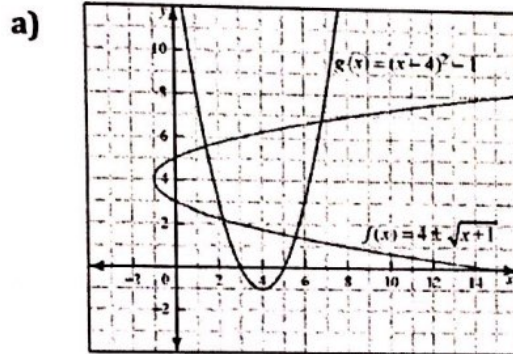
a)  $f(x) = x^2 + 6x + 15$

b)  $f(x) = x^2 - 4x - 3$

$f^{-1}(x) = \underline{\hspace{2cm}}$

$f^{-1}(x) = \underline{\hspace{2cm}}$

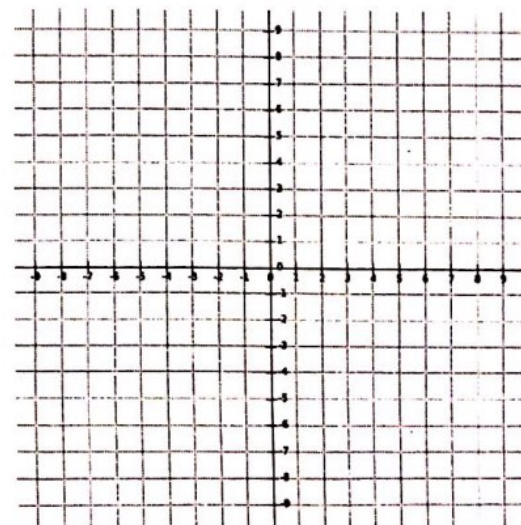
5) Determine if the two relations shown are inverses of each other. Justify your conclusion.



6) For the function  $f(x) = -5x + 6$

a) determine  $f^{-1}(x)$

b) Graph  $f(x)$  and its inverse

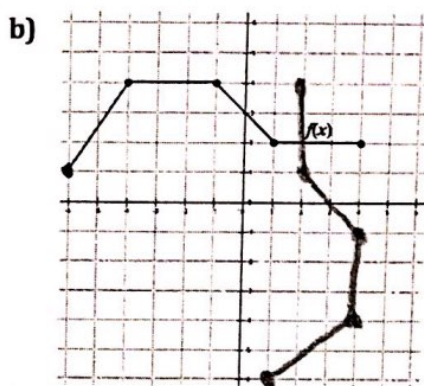
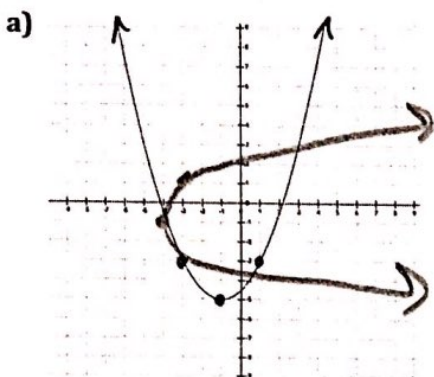


## 2.7 Inverse of a Function - Worksheet

MCR3U

Jensen

1) Sketch the graph of the inverse of each function. Is the inverse of  $f(x)$  a function? Explain.



2) Determine the equation of the inverse of each function.

a)  $f(x) = 2x$

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

b)  $f(x) = 6x - 5$

$$x = 6y - 5$$

$$\frac{x+5}{6} = \frac{6y}{6}$$

$$\frac{1}{6}x + \frac{5}{6} = y$$

c)  $f(x) = \frac{2x+4}{5}$

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

$$5x = 2y+4$$

$$\frac{5x-4}{2} = \frac{2y}{2} \quad y = \frac{5}{2}x - 2$$

3) Determine the equation of the inverse of each function

a)  $f(x) = x^2 + 6$

$$y = \pm\sqrt{x-6}$$

b)  $f(x) = (x+8)^2$

$$y = \pm\sqrt{x} - 8$$

c)  $f(x) = \sqrt{x} - 3$

$$y = (x+3)^2$$

d)  $f(x) = \sqrt{x+1}$

$$y = x^2 - 1$$

X:  
-6

X:  
-1

-1/5

4) For each quadratic function, complete the square and then determine the equation of the inverse.

a)  $f(x) = x^2 + 6x + 15$

$$x - 15 = y^2 + 6y + 9$$

$$x - 6 = (y + 3)^2$$

$$y = \pm \sqrt{x - 6} - 3$$

$f^{-1}(x) = \underline{\hspace{2cm}}$

b)  $f(x) = x^2 - 4x - 3$

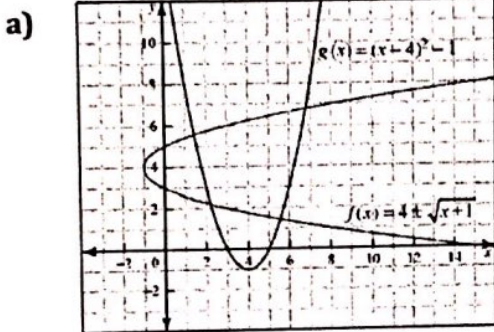
$$x + 3 = y^2 - 4y + 4$$

$$\sqrt{x + 7} = \sqrt{(y - 2)^2}$$

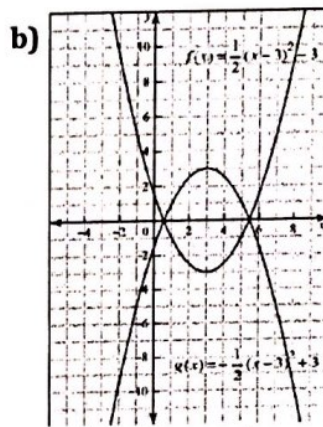
$$y = \pm \sqrt{x + 7} + 2$$

$f^{-1}(x) = \underline{\hspace{2cm}}$

5) Determine if the two relations shown are inverses of each other. Justify your conclusion.



Yes



No

2

6) For the function  $f(x) = -5x + 6$

a) determine  $f^{-1}(x)$

b) Graph  $f(x)$  and its inverse

$$x = -5y + 6$$

$$-6 \quad -6$$

$$\frac{x - 6}{-5} = \frac{-5y}{-5}$$

$$\frac{-1}{5}x + \frac{6}{5} = y$$

