

Learning Activity – Section 9.1 – Inverse Functions

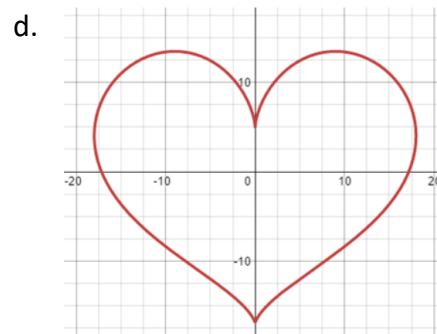
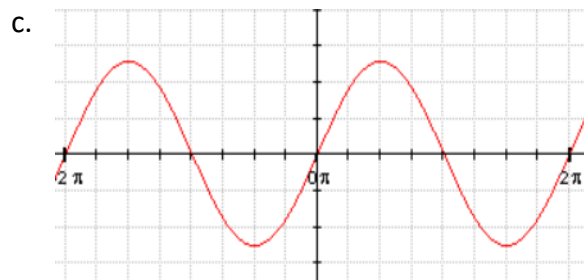
Names: _____

1. Determine whether each relation defines y as a function of x . If the relation is not a function, explain why not. If the relation defines y as a function of x , determine whether the function is a one-to-one function. If the function is not a one-to-one function, explain why not.

a.

x	y
$-1/3$	-5
0	5
0.25	-5
123	15

b. $\{(0, -1), (-1, 0), (1, 3), (-3, -3)\}$



2. Determine whether the two functions are inverses.

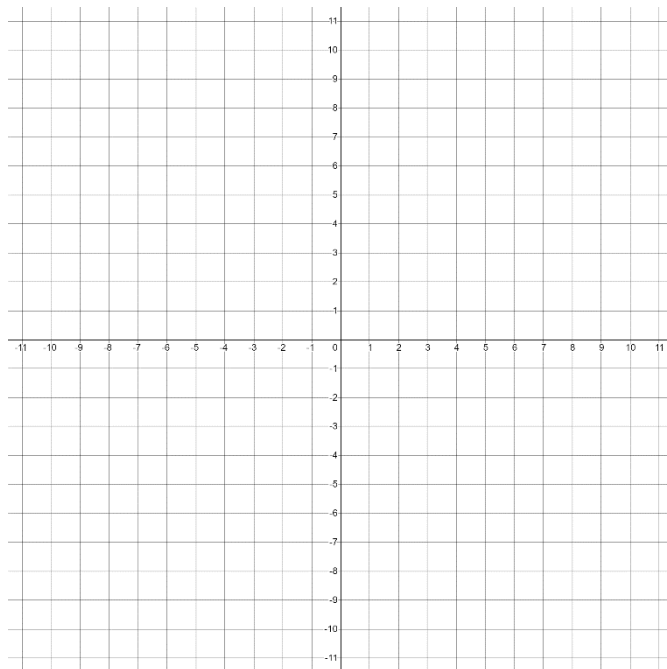
$$f(x) = \frac{1}{2}x - 3 \quad \text{and} \quad g(x) = 2x + 6$$

3. Write an equation for the inverse function for the one-to-one function.

$$h(x) = \frac{x+10}{x-3}$$

4. Consider the function $m(x) = -x^2 + 5; x \geq 0$.

- a. Graph m .



- b. From the graph of m , is m a one-to-one function? Explain.

- c. Write the domain of m in interval notation:

- d. Write the range of m in interval notation:

- e. Write the domain of m^{-1} in interval notation:

- f. Write the range of m^{-1} in interval notation:

- g. Write an equation for m^{-1} .

- h. Graph $y = m^{-1}(x)$ on the same coordinate system as $y = m(x)$.