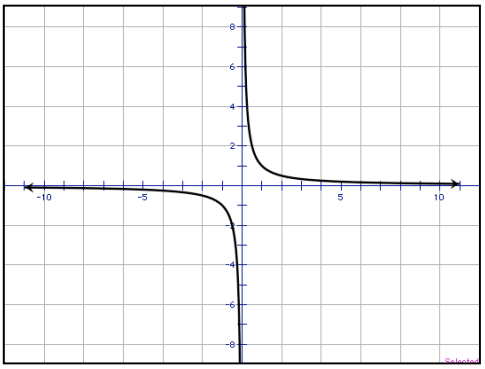
Algebra 2 Name:
Inverse Functions Review Date:

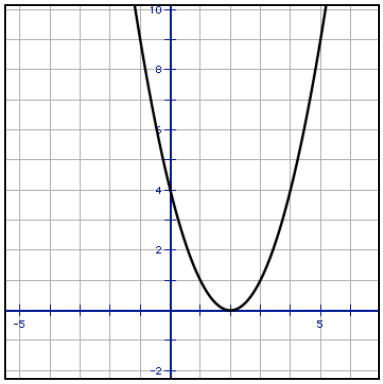
Review:
Inverse Functions

1. For each function below, determine if an inverse function exists over the entire domain. If it does not, identify how the domain could be restricted so that the function will have an inverse function.

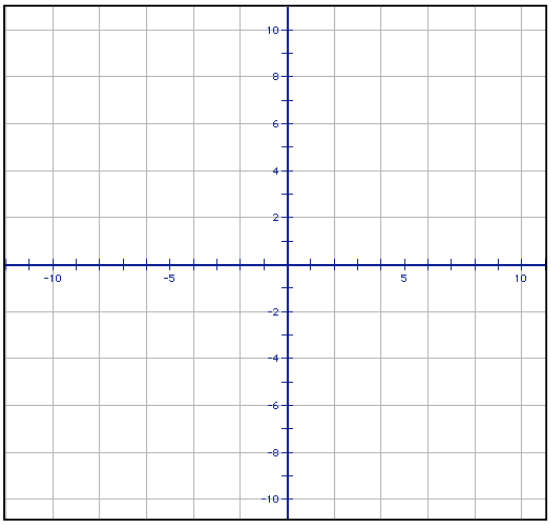
a.



b.

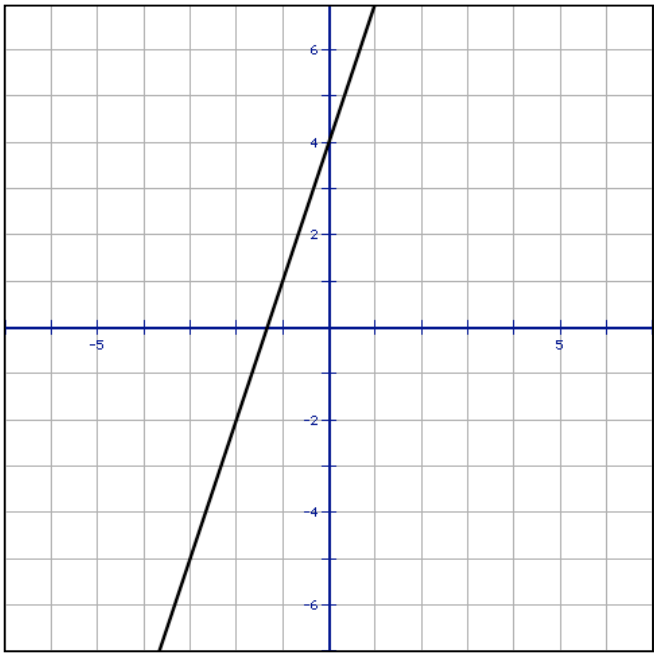


2. On the grid below, draw a graph of a function that does not have an inverse. Then explain why your function does not have an inverse.

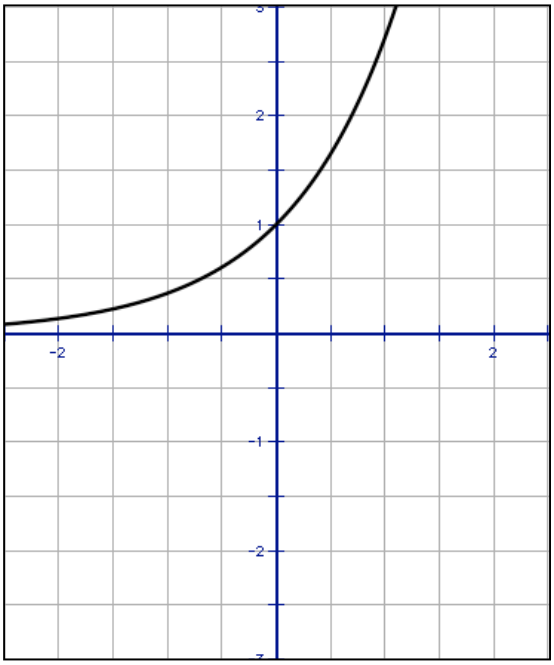


3. For the functions graphed below, create a table of input/output values for both the function and its inverse (you only need a few points). Then, draw in its inverse function on the graph.

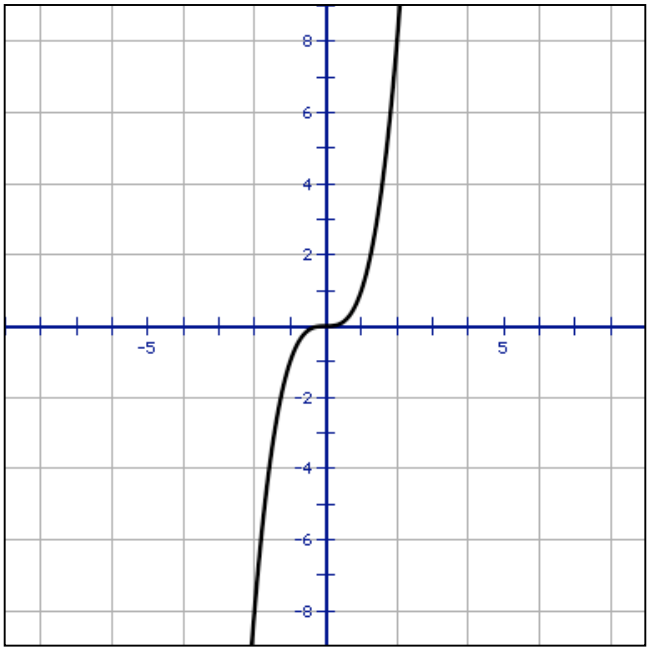
a.



b.



c.



4. Find the algebraic rule for the inverse of each function below.

a. $y = 4x + 9$

b. $y = \frac{4}{x}$

c. $y = \frac{2x - 5}{7}$

d. $y = \frac{4}{x + 1}$

e. $y = \frac{6}{x + 3}$

f. $y = \frac{5x - 6}{7}$

5. Atmospheric pressure under water P (in pounds per square inch) is a function of water depth d (in feet) and can be determined using $P(d) = 14.7 + 0.445d$.

a. Find *P(54)*. What does that value represent in regards to pressure and water depth?

b. At what depth is the atmospheric pressure 26.27 pounds per square inch?

c. Find the value of $P^{-1}(31.7)$.

d. Find a rule for $P^{-1}(x)$.

6. Suppose that the cost (in dollars) for mailing a package weighing x pounds is given by the function $f(x) = 14.95 + 3x$.

a. Find $f(5)$. What does that value represent in regards to cost and package weight?

b. Find $f^{-1}(38.95)$. What does that value represent in regards to cost and package weight?

c. Write an algebraic rule for $f^{-1}(x)$.