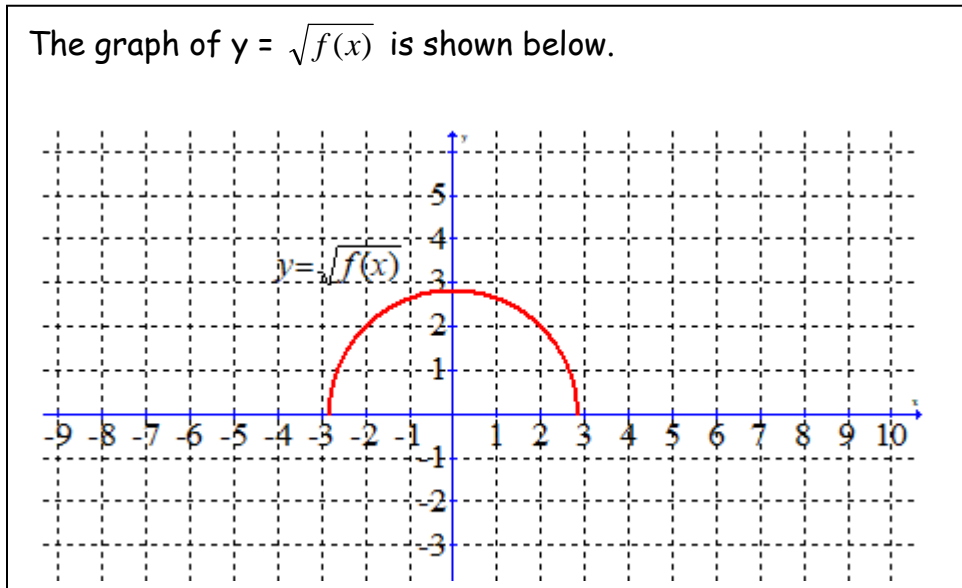


### Square Root of a Function

1. The graph of  $f(x) = \left(\frac{-2}{3}\right)x + 6$  is transformed into  $y = \sqrt{f(x)}$ . The invariant points are at (a,b,c) (d,0). Find the values of a,b,c, and d.
2. Given  $f(x) = 2x - 4$ , state the domain and range of  $\sqrt{f(x)}$ .

Use the following information to answer the next question.

The graph of  $y = \sqrt{f(x)}$  is shown below.



3. Which equation below would most likely represent  $y = f(x)$ ?  
a)  $y = x + k$       b)  $y = -x^2 + k$       c)  $y = x^2 - k$       d)  $y = x - k$

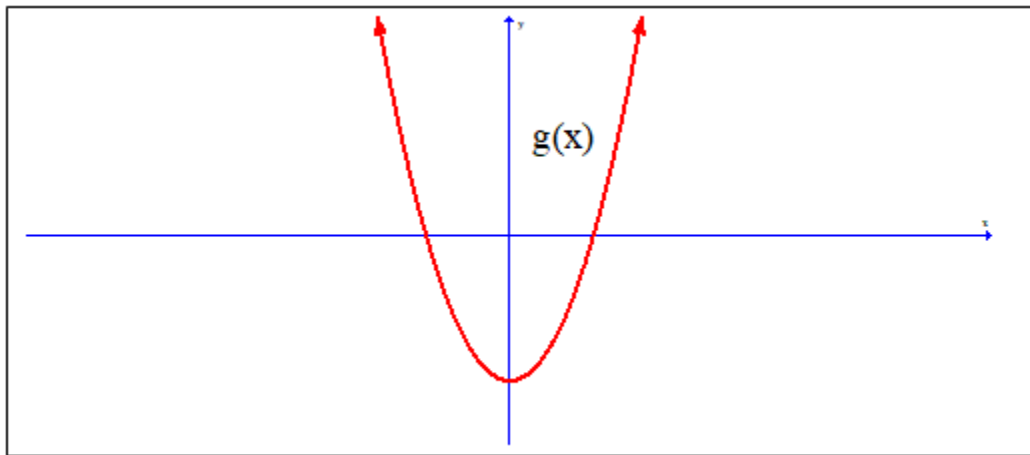
4. For each point on the graph of  $y = f(x)$ , does a corresponding point on the graph of  $y = \sqrt{f(x)}$  exist? If so, state the coordinates (rounded to 2 decimals if necessary)

a) (4, -7)

b) (-1,9)

c) (2,15)

Use the graph below to answer the next question.

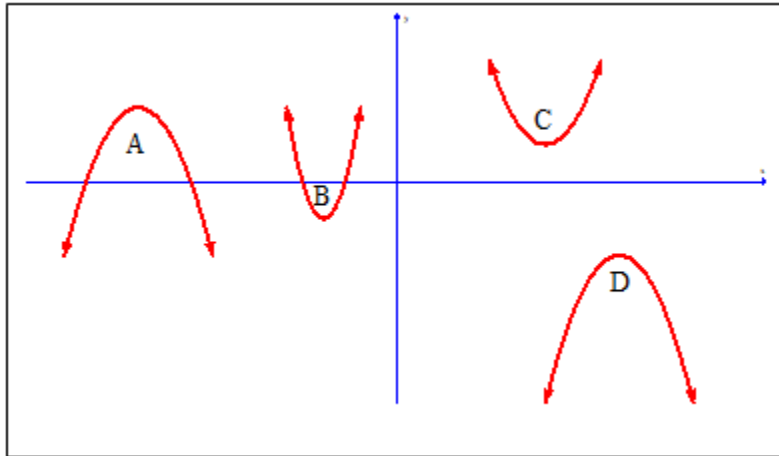


5. Which statement below is true?

- a) The x-intercepts of  $y = g(x)$  and  $y = \sqrt{g(x)}$  are different.
- b) The y-intercepts of  $y = g(x)$  and  $y = \sqrt{g(x)}$  are the same.
- c) The y-intercept of  $y = \sqrt{g(x)}$  does not exist.
- d) The x-intercepts of  $y = \sqrt{g(x)}$  do not exist.

6. Given  $y = x - 1$  and  $y = \sqrt{x-1}$ , determine the domain and range of each function.

Use the graph below to answer the next question.

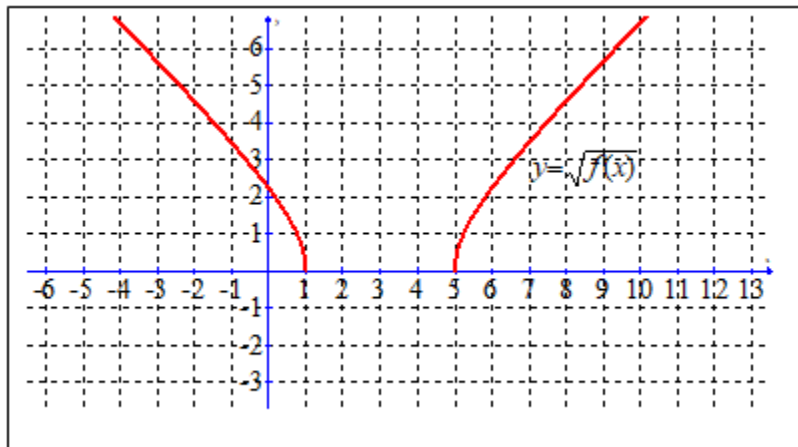


7. Use A, B, C, or D to fill in the blanks below.

- a) Which graph will have a non-existent square root function? \_\_\_\_\_
- b) Which graph will have a domain of real numbers for the square root function? \_\_\_\_\_
- c) Which graph will have a domain of only negative numbers for the square root function? \_\_\_\_\_
- d) Which graph may have no invariant points (other than the non-existent function)? \_\_\_\_\_
- e) Which 2 graphs will have a y-intercept for the square root function? \_\_\_\_\_ and \_\_\_\_\_
- f) What is the total number of invariant points for A and B (assuming that the vertex of A is  $> 1$ )? \_\_\_\_\_

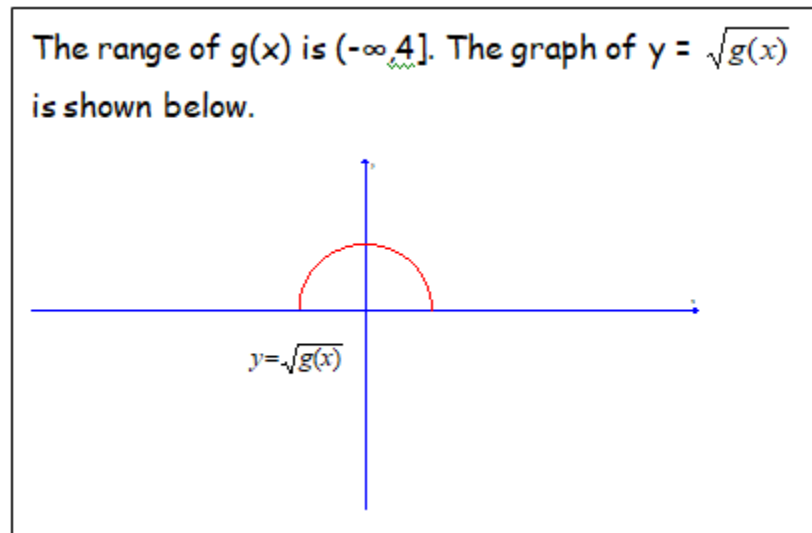
8. A linear function,  $y = f(x)$  has an x-intercept of -3. What are 2 possible domains for  $y = \sqrt{f(x)}$ ?

Use the graph below to answer the next question.



9. The graph of  $y = \sqrt{f(x)}$  is shown above. Which of the following points could not have been on  $y = f(x)$ ?
- a) (4,3)                      b) (1,0)                      c) (0,5)                      d) (-1,12)

Use the graph below to answer the next question.



10. The range of  $y = \sqrt{g(x)}$  can be written as  $[a, b]$ . What are the values of  $a$  and  $b$ ?