

## Section 2.2 Extra Practice

1. Complete the table.

$x$	$f(x)$	$\sqrt{f(x)}$
-2	16	
-1	8	
0		2
1		1.4
2	1	

2. For each point given 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 to the nearest hundredth.

- a) (9, 14)                      b) ( $p, r$ )  
 c) (-2, 7)                      d) (-32, -1)

3. For each function, graph  $y = \sqrt{f(x)}$ .

- a)  $f(x) = x^2 - 9$   
 b)  $f(x) = -x^2 + 9$   
 c)  $f(x) = x^2 + 9$

4. a) Sketch the graph of  $f(x) = x + 4$ .  
 b) State the domain and range of  $y = f(x)$ .  
 c) Sketch the graph of  $y = \sqrt{f(x)}$ .  
 d) State the domain and range of  $y = \sqrt{f(x)}$ .

5. For each function, graph  $y = \sqrt{f(x)}$  and state the domain and range of  $y = \sqrt{f(x)}$ .

- a)  $f(x) = x - 4$   
 b)  $f(x) = x + 9$   
 c)  $f(x) = x - 9$

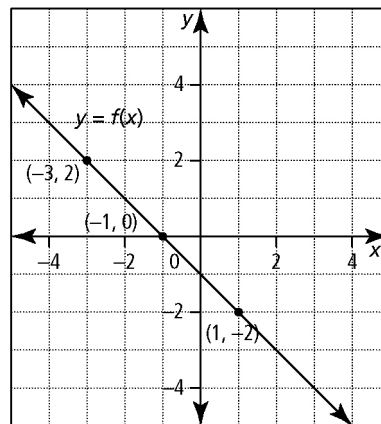
6. Determine the domains and ranges of each pair of functions. Explain why the domains and ranges differ.

- a)  $y = x + 5, y = \sqrt{x + 5}$   
 b)  $y = 3x - 9, y = \sqrt{3x - 9}$   
 c)  $y = -x - 10, y = \sqrt{-x - 10}$

7. Identify the domain and range of  $y = \sqrt{f(x)}$ .

- a)  $f(x) = x^2 - 16$   
 b)  $f(x) = x^2 + 5$   
 c)  $f(x) = 2x^2 + 18$

8. Using the graph of  $y = f(x)$ , sketch the graph of  $y = \sqrt{f(x)}$ .



9. a) Sketch the graphs of  $y = x^2 + x - 20$  and  $y = \sqrt{x^2 + x - 20}$ .

- b) Why is the graph of  $y = \sqrt{x^2 + x - 20}$  undefined over an interval?

10. a) Give examples of points on the graph of  $y = f(x)$  that would be invariant when graphing  $y = \sqrt{f(x)}$ .  
 b) Give examples of points on the graph of  $y = f(x)$  that would be undefined on the graph of  $y = \sqrt{f(x)}$ .

