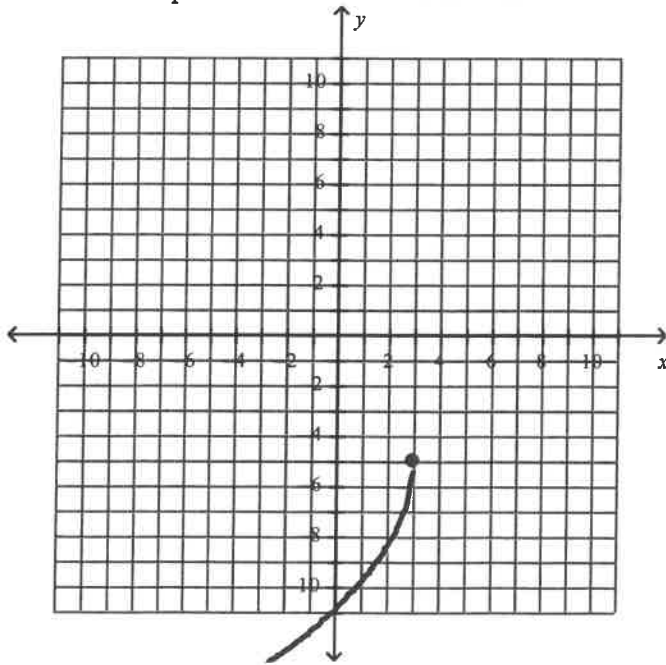


## Math 12 - Radical Functions Review Assignment

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Compared to the graph of the base function  $f(x) = \sqrt{x}$ , the graph of the function  $g(x) + 8 = \sqrt{x}$  is translated  
A 8 units to the left  
B 8 units up  
C 8 units to the right  
D 8 units down
- \_\_\_\_\_ 2. When  $b < 0$ , the function  $g(x) = \sqrt{bx}$  has what relationship to the base function  $f(x) = \sqrt{x}$ ?  
A  $f(x)$  is stretched horizontally by a factor of  $1/|b|$   
B  $f(x)$  is stretched horizontally by a factor of  $1/|b|$  and reflected in the y-axis  
C  $f(x)$  is stretched vertically by a factor of  $|b|$   
D  $f(x)$  is stretched vertically by a factor of  $|b|$  and reflected in the x-axis
- \_\_\_\_\_ 3. When the graph of  $y = \sqrt{x}$  is vertically stretched by a factor of 3, the point  $(9, -10)$  will be translated to the point  
A  $(-10, 9)$   
B  $(3, -30)$   
C  $(-30, 9)$   
D  $(9, -30)$
- \_\_\_\_\_ 4. Given the function  $f(x) = \sqrt{x-h} + k$  with a domain of  $\{x|x \geq -5, x \in \mathcal{R}\}$  and a range of  $\{y|y \geq 8, y \in \mathcal{R}\}$ , which of the following best describes the vertical and horizontal translations with respect to the graph of  $f(x) = \sqrt{x}$ ?  
A 5 units to the left and 8 units up  
B 8 units to the left and 5 units down  
C 8 units to the left and 5 units up  
D 5 units to the left and 8 units down
- \_\_\_\_\_ 5. What is the equation of the radical function shown in the graph below?



A  $f(x) = -2\sqrt{\frac{1}{-3}(x-5)} - 3$

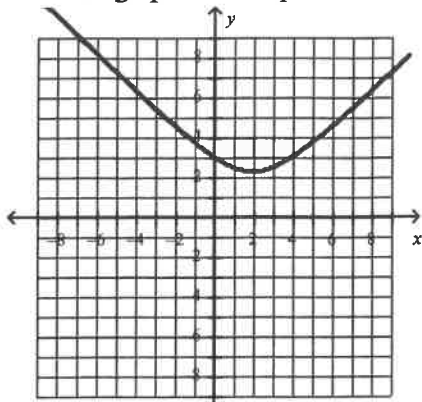
B  $f(x) = -2\sqrt{-3(x+3)} - 5$

C  $f(x) = -2\sqrt{-3(x-3)} - 5$

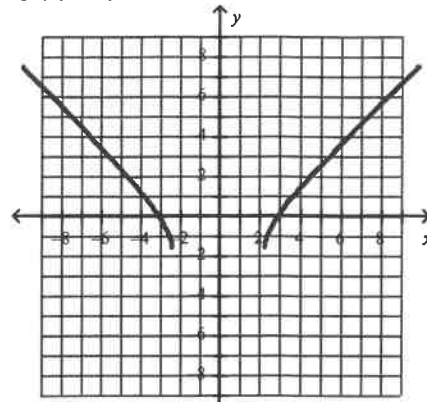
D  $f(x) = -2\sqrt{\frac{1}{-3}(x-3)} - 5$

6. Which is the graph of the square root of the function  $f(x) = (x - 5)^2 - 2$ ?

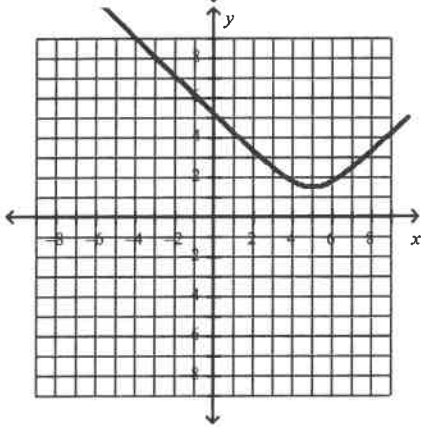
A



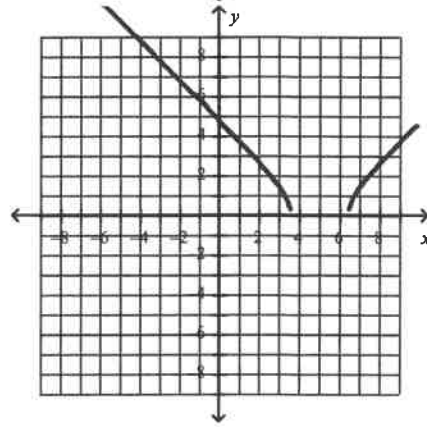
C



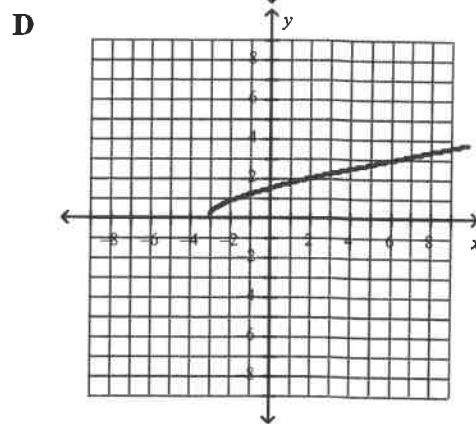
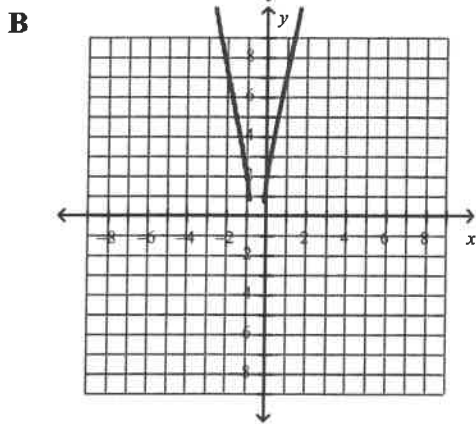
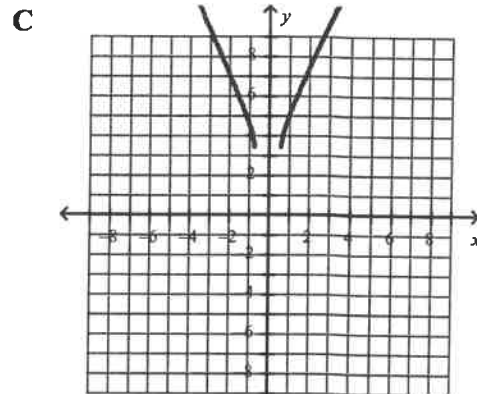
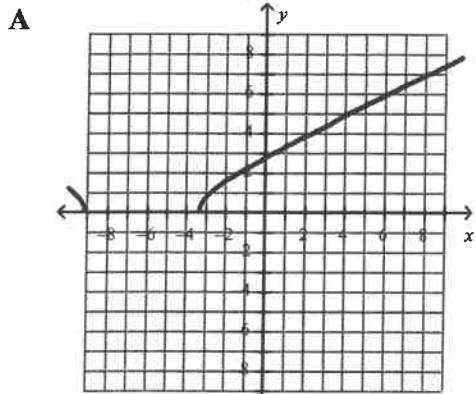
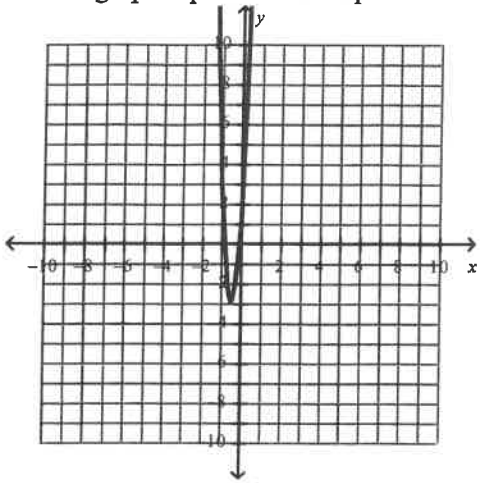
B



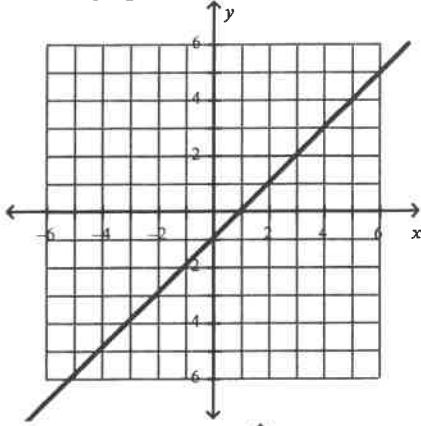
D



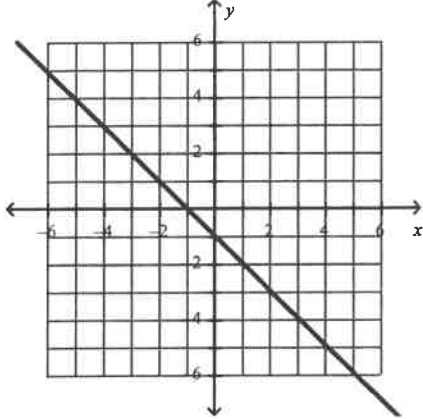
7. Which graph represents the square root of the function shown in the graph?



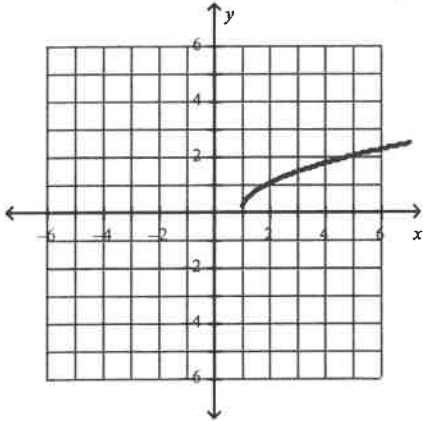
8. Which graph represents the square root of the graph shown?



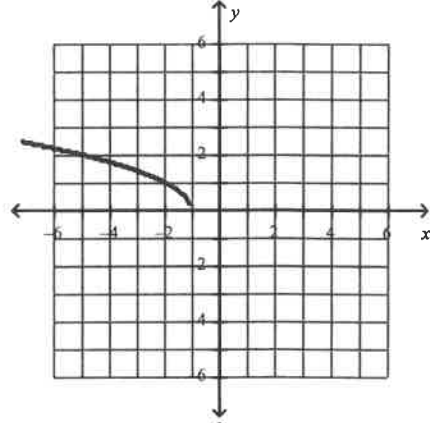
A



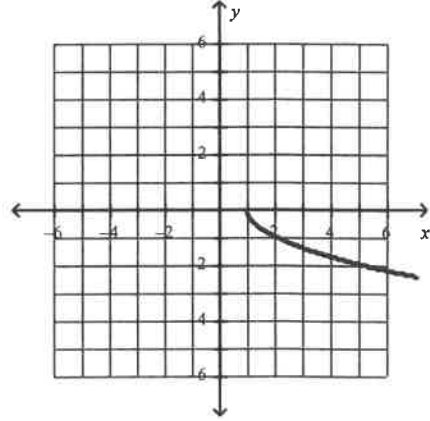
B



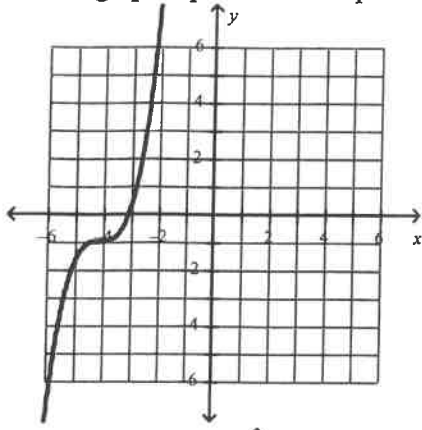
C



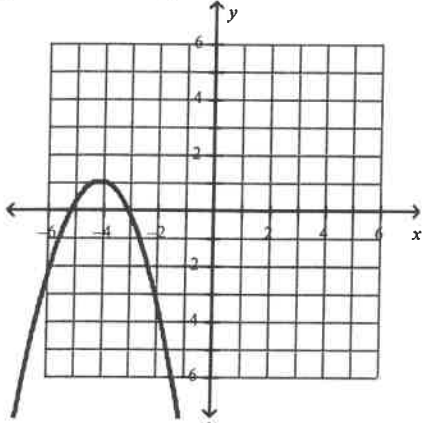
D



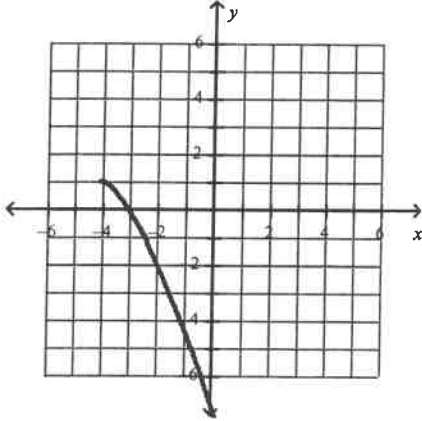
9. Which graph represents the square root of the graph shown?



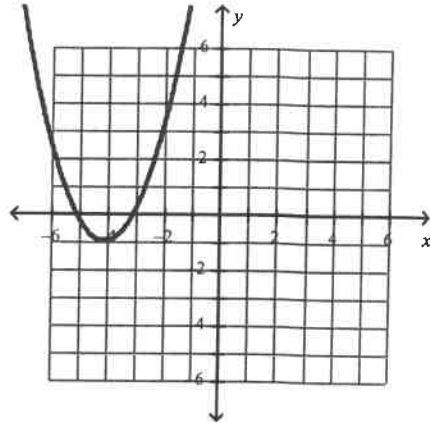
A



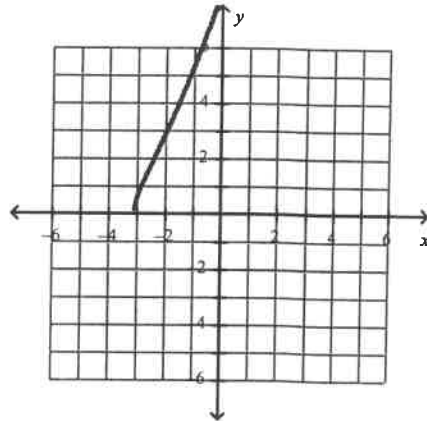
B



C

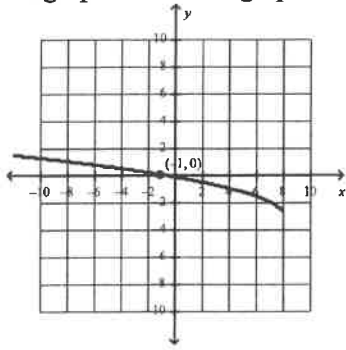


D

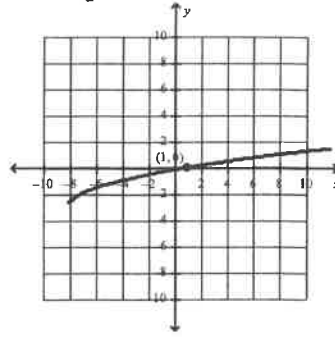


10. Which graph shows the graphical solution to the radical equation  $0 = \sqrt{x+8} - 3$ ?

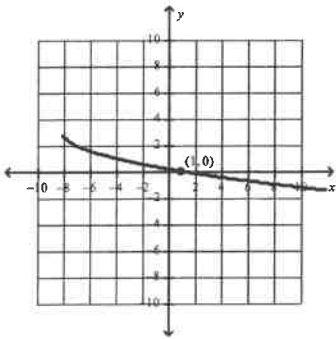
A



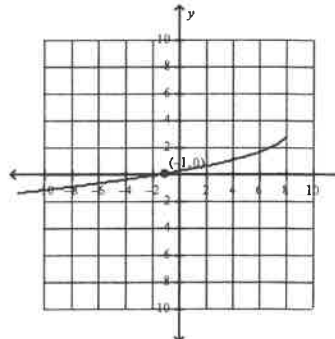
C



B

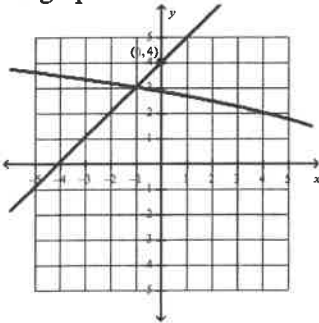


D

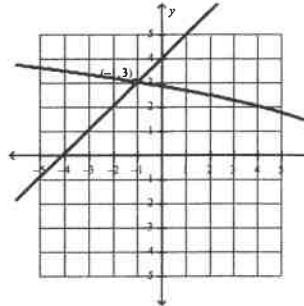


11. Which graph shows the solution to the radical equation  $\sqrt{8-x} = x+4$ ?

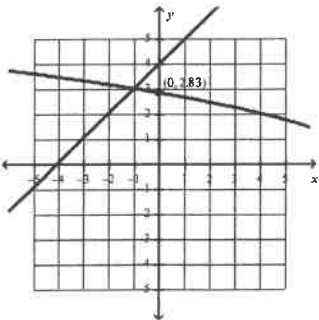
A



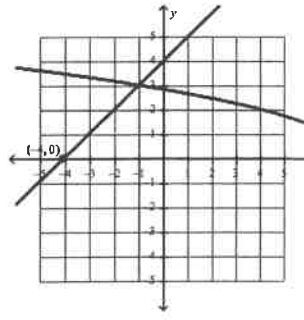
C



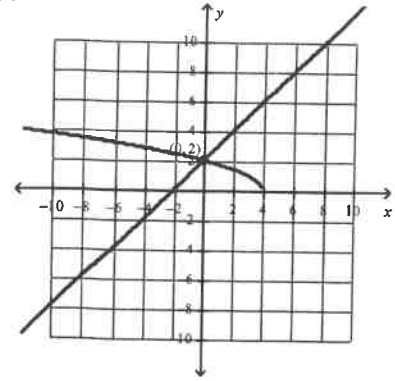
B



D



\_\_\_ 12. Which radical equation can be solved using the graph shown below?



**A**  $-\sqrt{4-x} = x+2$

**B**  $\sqrt{4-x} = x+2$

**C**  $x+2 = -\sqrt{4+x}$

**D**  $\sqrt{4+x} = x+2$

\_\_\_ 13. What is the solution to the radical equation  $0 = \sqrt{x+9} - 3$ ?

**A** 18

**B** 36

**C** -18

**D** 0

\_\_\_ 14. What is the solution to the radical equation  $0 = 2\sqrt{2(x+4)} - 8$ ?

**A** -4

**B** 12

**C** 4

**D** 128

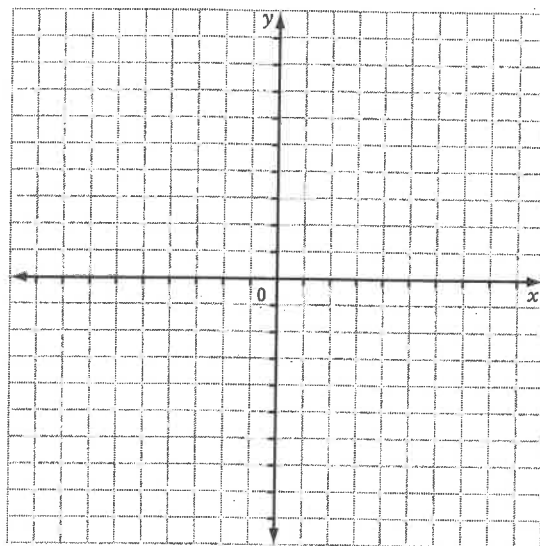
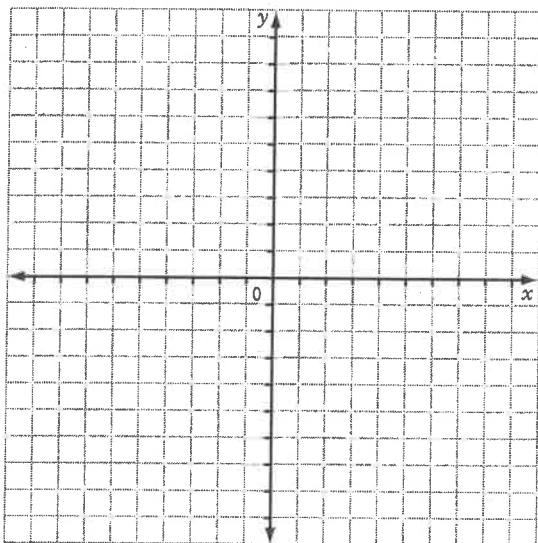
## Chapter 2 Review

### 2.1 Radical Functions and Transformations, pages 39–46

1. Explain how to transform the graph of  $y = \sqrt{x}$  to obtain the graph of each transformed function. Then, draw a sketch of the new function.

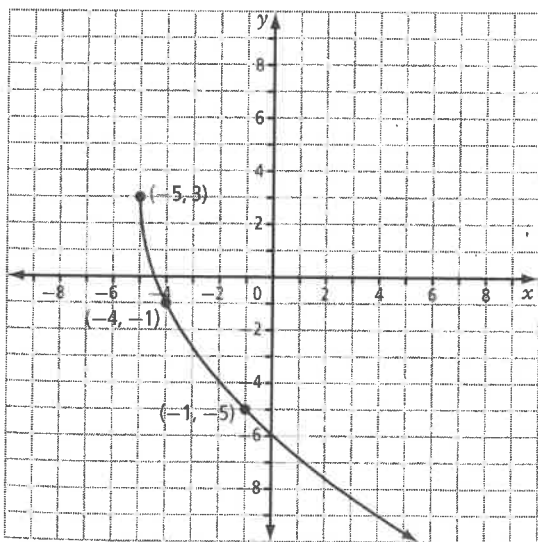
a)  $y = 4\sqrt{-(x-5)} + 1$

b)  $y = -3\sqrt{2(x+1)} - 3$

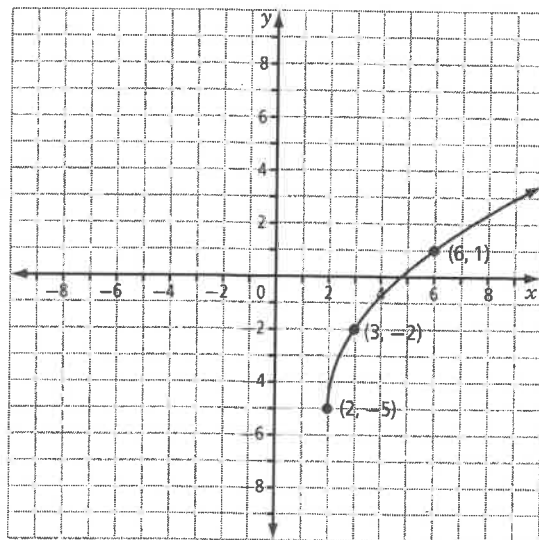


2. For each graph, write the equation of a radical function in the form  $y = a\sqrt{b(x-h)} + k$ . State the domain and range.

a)



b)

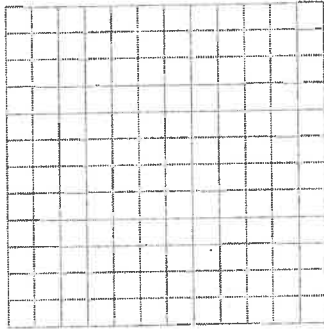




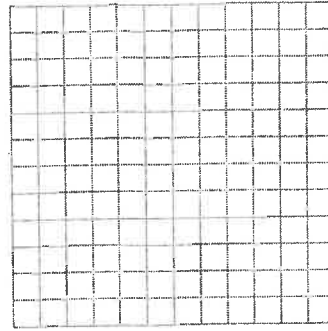
## 2.2 Square Root of a Function, pages 47–54

3. Use technology to graph  $y = \sqrt{f(x)}$  given the following functions. Sketch the graph on the grid. State the domain and range.

a)  $f(x) = 4x - 1$



b)  $f(x) = x^2 - 9$



## 2.3 Solving Radical Equations Graphically, pages 55–62

4. Determine the root(s) of each radical equation algebraically.

a)  $0 = \sqrt{x-2} - 3$

b)  $x = \sqrt{x-2} + 4$

5. Identify any restrictions on the variables. Then, solve each radical equation graphically.

a)  $\sqrt{x-1} - 5 = -2$

b)  $\sqrt{x+3} = -1$

