

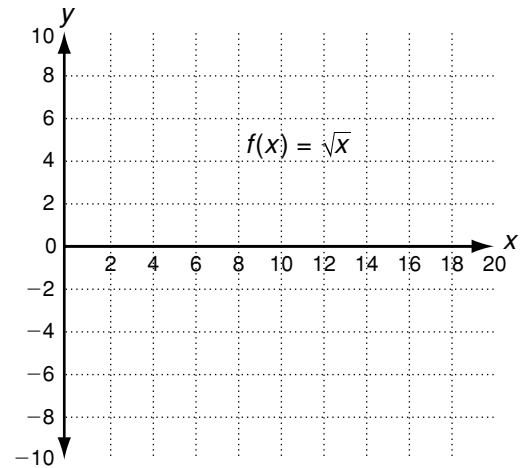
**LESSON** **8-7** **Practice A**  
**Radical Functions**

Graph each function.

$f(x) = \sqrt{x}$  is the parent function.

1.  $g(x) = \sqrt{x} - 2$

| $x$ | $g(x)$              | $(x, g(x))$ |
|-----|---------------------|-------------|
| 0   | $\sqrt{0} - 2 = -2$ | $(0, -2)$   |
| 1   | $\sqrt{1} - 2 = -1$ | $(1, -1)$   |
| 4   | $\sqrt{4} - 2 = 0$  | $(4, 0)$    |
| 9   | $\sqrt{9} - 2 = 1$  | $(9, 1)$    |
| 16  | $\sqrt{16} - 2 = 2$ | $(16, 2)$   |



a. Describe the transformation from the parent function.

\_\_\_\_\_

b. Identify the domain and range of  $g$ .

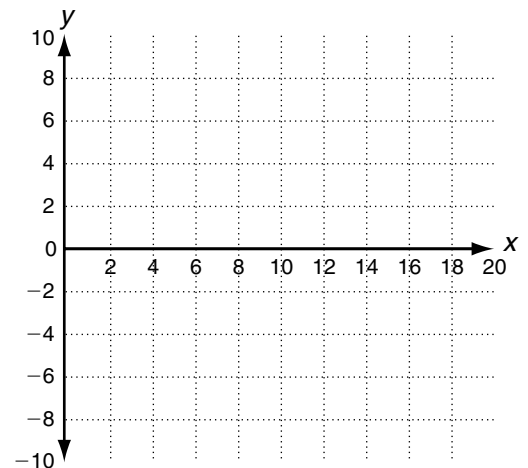
Domain:  $\{x \mid x \text{ _____}\}$

Range:  $\{y \mid y \text{ _____}\}$

2.  $g(x) = -\sqrt{x}$

a. Complete the table of values, then graph.

| $x$ | $g(x)$          | $(x, g(x))$ |
|-----|-----------------|-------------|
| 0   | $-\sqrt{0} = 0$ | $(0, 0)$    |
| 1   |                 |             |
| 4   |                 |             |
| 9   |                 |             |
| 16  |                 |             |



b. Describe the transformation from the parent function.

\_\_\_\_\_

c. Identify the domain and range of  $g$ .

\_\_\_\_\_

\_\_\_\_\_

Solve.

3. Horizontally stretch the function  $f(x) = \sqrt{x+5}$  by a factor of 3. What is the correct way to write the function  $g$ ?

$g(x) =$

\_\_\_\_\_

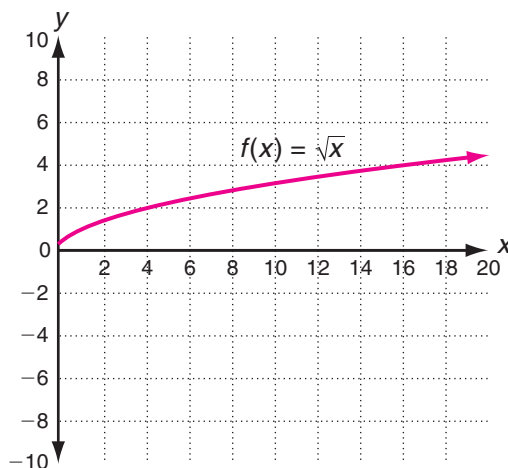
**LESSON**  
**8-7** **Practice A**  
**Radical Functions**

Graph each function.

$f(x) = \sqrt{x}$  is the parent function.

1.  $g(x) = \sqrt{x} - 2$

| $x$ | $g(x)$              | $(x, g(x))$ |
|-----|---------------------|-------------|
| 0   | $\sqrt{0} - 2 = -2$ | $(0, -2)$   |
| 1   | $\sqrt{1} - 2 = -1$ | $(1, -1)$   |
| 4   | $\sqrt{4} - 2 = 0$  | $(4, 0)$    |
| 9   | $\sqrt{9} - 2 = 1$  | $(9, 1)$    |
| 16  | $\sqrt{16} - 2 = 2$ | $(16, 2)$   |



a. Describe the transformation from the parent function.

**Translation 2 units down**

b. Identify the domain and range of  $g$ .

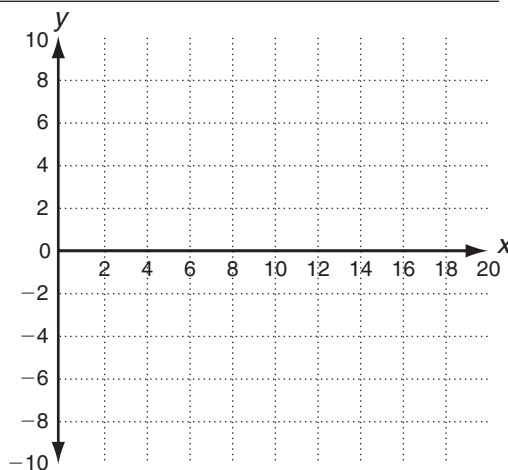
**Domain:  $\{x \mid x \geq 0\}$**

**Range:  $\{y \mid y \leq 0\}$**

2.  $g(x) = -\sqrt{x}$

a. Complete the table of values, then graph.

| $x$ | $g(x)$                              | $(x, g(x))$                  |
|-----|-------------------------------------|------------------------------|
| 0   | $-\sqrt{0} = 0$                     | $(0, 0)$                     |
| 1   | <b><math>-\sqrt{1} = -1</math></b>  | <b><math>(1, -1)</math></b>  |
| 4   | <b><math>-\sqrt{4} = -2</math></b>  | <b><math>(4, -2)</math></b>  |
| 9   | <b><math>-\sqrt{9} = -3</math></b>  | <b><math>(9, -3)</math></b>  |
| 16  | <b><math>-\sqrt{16} = -4</math></b> | <b><math>(16, -4)</math></b> |



b. Describe the transformation from the parent function.

**Reflection across the x-axis**

c. Identify the domain and range of  $g$ .

**Domain:  $\{x \mid x \geq 0\}$ ;**

**range:  $\{y \mid y \leq 0\}$**

Solve.

3. Horizontally stretch the function  $f(x) = \sqrt{x+5}$  by a factor of 3. What is the correct way to write the function  $g$ ?

**$g(x) = \sqrt{\frac{1}{3}(x+5)}$**