Name _____ Date _____ Class _____

TEKS 2A.9.A

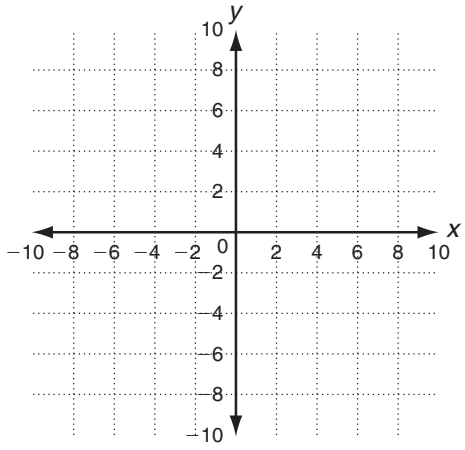
LESSON 8-7

Practice B

Radical Functions

Graph each function, and identify its domain and range.

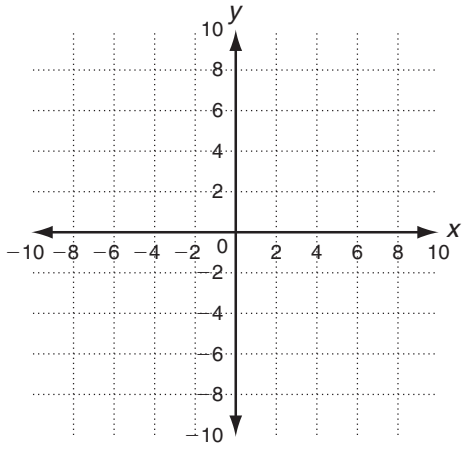
1. $f(x) = \sqrt{x - 4}$



Domain: _____

Range: _____

2. $f(x) = \sqrt[3]{x} + 1$



Domain: _____

Range: _____

Using the graph of $f(x) = \sqrt{x}$ as a guide, describe the transformation.

3. $g(x) = 4\sqrt{x + 8}$ _____

4. $g(x) = -\sqrt{3x} + 2$

_____

Use the description to write the square root function *g*.

5. The parent function $f(x) = \sqrt{x}$ is reflected across the *y*-axis, vertically stretched by a factor of 7, and translated 3 units down. _____

6. The parent function $f(x) = \sqrt{x}$ is translated 2 units right, compressed horizontally by a factor of $\frac{1}{2}$, and reflected across the *x*-axis. _____

Solve.

7. For a gas with density, *n*, measured in atoms per cubic centimeter, the average distance, *d*, between atoms is given by $d = \left(\frac{3}{4\pi n}\right)^{\frac{1}{3}}$. The gas in a certain region of space has a density of just 10 atoms per cubic centimeter. Find the average distance between the atoms in that region of space.

_____

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LESSON 8-7

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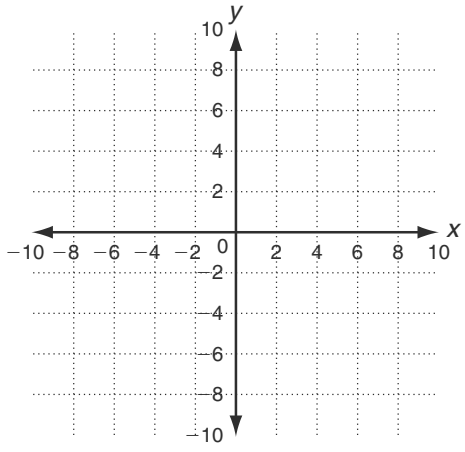
Radical Functions

Graph each function, and identify its domain and range.

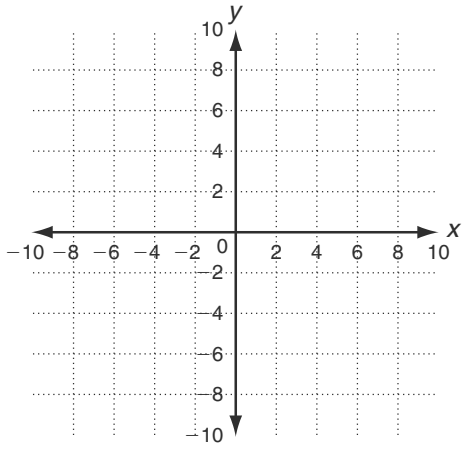
1. $f(x) = \sqrt{x - 4}$



Domain: $\{x \mid x \geq -4\}$

Range: $\{y \mid y \geq 0\}$

2. $f(x) = \sqrt[3]{x} + 1$



Domain: all real numbers

Range: all real numbers

Using the graph of $f(x) = \sqrt{x}$ as a guide, describe the transformation.

3. $g(x) = 4\sqrt{x + 8}$ Vertical stretch by a factor of 4 and translate 8 units left

4. $g(x) = -\sqrt{3x} + 2$ Reflection across the x-axis, horizontal compression by a factor of $\frac{1}{3}$, and translate 2 units up

Use the description to write the square root function g.

5. The parent function $f(x) = \sqrt{x}$ is reflected across the y-axis, vertically stretched by a factor of 7, and translated 3 units down. $g(x) = 7\sqrt{-x} - 3$

6. The parent function $f(x) = \sqrt{x}$ is translated 2 units right, compressed horizontally by a factor of $\frac{1}{2}$, and reflected across the x-axis. $g(x) = -\sqrt{2(x - 2)}$

Solve.

7. For a gas with density, n, measured in atoms per cubic centimeter, the average distance, d, between atoms is given by $d = \left(\frac{3}{4\pi n}\right)^{\frac{1}{3}}$. The gas in a certain region of space has a density of just 10 atoms per cubic centimeter. Find the average distance between the atoms in that region of space.

0.29 cm