MODULE 7 QUIZ

Ready to Go On? Organizer

Objective: Assess students' mastery of concepts and skills in this section.

Resources

Assessment Resources
Module Assessment

INTERVENTION

Resources

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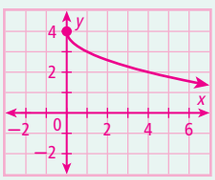
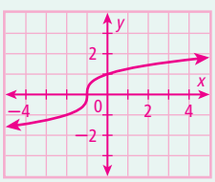
Answers

1. D: $\{x \mid x \geq 0\}$;
R: $\{y \mid y \leq 4\}$



2.



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Assessment and Intervention

7-1 Radical Functions

Graph each function, and identify its domain and range.

1. $f(x) = -\sqrt{x} + 4$
2. $f(x) = \sqrt[3]{x+1}$ **D: ℝ; R: ℝ**
3. Water is draining from a tank connected to two pipes. The speed f in feet per second at which water drains through the first pipe can be modeled by $f(x) = \sqrt{64(x-2)}$, where x is the depth of the water in the tank in feet. The graph of the corresponding function for the second pipe is a translation of f 4 units right. Write the corresponding function g, and use it to estimate the speed at which water drains through the second pipe when the depth of the water is 10 ft. $g(x) = \sqrt{64(x-6)}$; 16 ft/s
4. Use the description to write the square-root function g. The parent function $f(x) = \sqrt{x}$ is reflected across the x-axis and then translated 2 units right and 3 units down. $g(x) = -\sqrt{x-2} - 3$

Graph each inequality.

5. $y > \sqrt{x} + 4$
6. $y \leq \sqrt{x-2}$

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

7. $g(x) = -\sqrt{x} + 1$
8. $h(x) = \sqrt{4x}$
9. $j(x) = \sqrt{-(x-8)}$
10. $k(x) = -\frac{1}{2}\sqrt{x} + 1$
11. Use the description to write the square root function g. The parent function $f(x) = \sqrt{x}$ is stretched vertically by a factor of 3 and translated 4 units left.

7-2 Solving Radical Equations and Inequalities

Solve each equation.

12. $-2\sqrt[3]{5x-5} = -10$ **26**
13. $\sqrt{x+4} = x - 8$ **12**
14. $3\sqrt[3]{x-2} = \sqrt[3]{6x}$ $\frac{18}{7}$
15. The formula $d = \sqrt[3]{\frac{4w}{0.02847}}$ relates the average diameter d of a cultured pearl in millimeters to its weight w in carats. To the nearest tenth of a carat, what is the weight of a cultured pearl with an average diameter of 7 mm? **2.4 carats**
16. The time T in seconds required for a pendulum to complete one back-and-forth swing can be determined from the formula $T = 2\pi\sqrt{\frac{L}{9.8}}$, where L is the length of the pendulum in meters. Estimate the length of a pendulum that completes one back-and-forth swing in 2.5 s.
17. A tetrahedron is a triangular pyramid with four congruent faces. The side length s in meters of a tetrahedron is given by the formula $s = \left(6V\sqrt{2}\right)^{\frac{1}{3}}$, where V is the volume of the tetrahedron in cubic meters. What is the volume of a tetrahedron with a side length of 8 m? Round to the nearest tenth.

Solve each inequality.

18. $\sqrt{x+5} < 4$ $-5 \leq x < 11$
19. $\sqrt[3]{2x} \geq -2$ $x \geq -4$
20. $\sqrt{x-6} - 10 \leq 4$ $6 \leq x \leq 202$
21. $\sqrt{x-4} \leq 3$
22. $\sqrt{2x+7} - 6 > -1$
23. $\sqrt{3x} - 4 < 2$

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Diagnose and Prescribe

NO INTERVENE

Ready to Go On? Intervention	Ready to Go On? Intervention: Worksheets	Online	
Lesson 7-1	7-1 Intervention	Activity 7-1	Diagnose and Prescribe Online
Lesson 7-2	7-2 Intervention	Activity 7-2	

YES ENRICH

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