

Unit 5 Radical Functions, Expressions, and Equations

MODULE 10 Radical Functions

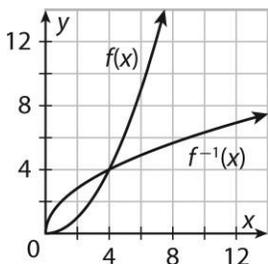
LESSON 10-2

LESSON 10-1

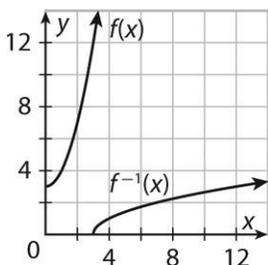
Practice and Problem Solving: A/B

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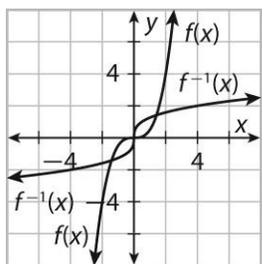
1. $f^{-1}(x) = 2\sqrt{x}$



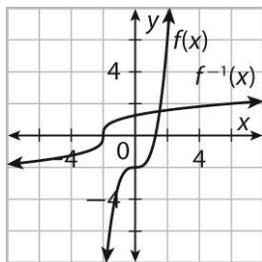
2. $f^{-1}(x) = \sqrt{x-3}$



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



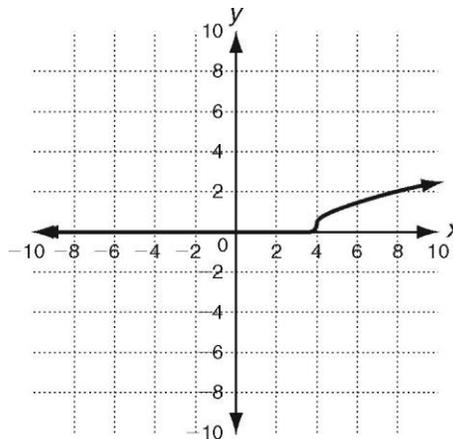
4. $f^{-1}(x) = \sqrt[3]{x+2}$



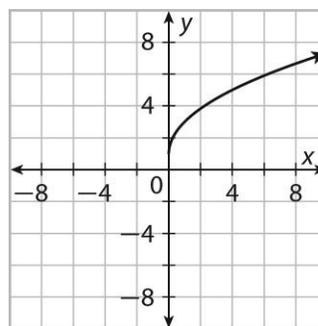
5. $t = \sqrt{\frac{d}{4.9}}$

6. 5.5 seconds

1. $\{x \mid x \geq -4\}; \{y \mid y \geq 0\}$



2. $\{x \mid x \geq 0\}; \{y \mid y \geq 1\}$



3. Vertical stretch by a factor of 4 and horizontal translation 8 units left

4. Reflection across the x -axis, horizontal compression by a factor of $\frac{1}{3}$, and vertical translation 2 units up

5. $g(x) = 7\sqrt{-x} - 3$

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

7. a. $r = \sqrt{\frac{50}{\pi}} \approx 3.99$ inches

b. If volume goes from V to $2V$, radius must go from $r = \sqrt{\frac{V}{\pi h}}$ to

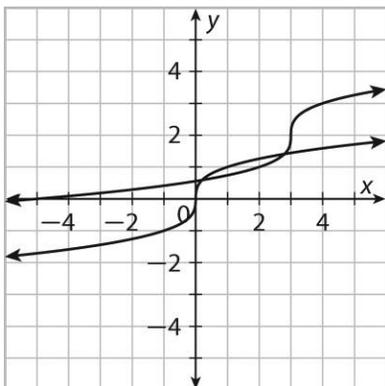
$$r_{\text{new}} = \sqrt{\frac{2V}{\pi h}} = \sqrt{2} \sqrt{\frac{V}{\pi h}} = \sqrt{2}r. \text{ So, the radius must be multiplied by } \sqrt{2}.$$

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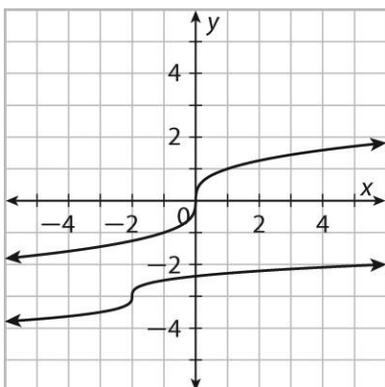
LESSON 10-3

Practice and Problem Solving: A/B

1. Translation 3 units to the right and
2 units up



2. Vertical compression by a factor of $\frac{1}{2}$;
translation 2 units to the left and 3 units
down



3. $g(x) = 2\sqrt[3]{x+1} - 1$
4. $g(x) = \frac{1}{2}\sqrt[3]{x} + 2$
5. $g(x) = \sqrt[3]{-(x+12)} - 4$
6. $g(x) = -8\sqrt[3]{x-11}$