GUIDED PRACTICE for Examples 4 and 5

Graph the function. Then state the domain and range.

6. $y = -4\sqrt{x} + 2$ **7.** $y = 2\sqrt{x+1}$ **8.** $f(x) = \frac{1}{2}\sqrt{x-3} - 1$

9. $y = 2\sqrt[3]{x-4}$ **10.** $y = \sqrt[3]{x} - 5$ **11.** $g(x) = -\sqrt[3]{x+2} - 3$

6.5 EXERCISES

HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 11, 17, and 37
- = **TAKS PRACTICE AND REASONING** Exs. 9, 25, 27, 37, 41, and 42
- = **MULTIPLE REPRESENTATIONS** Ex. 39

SKILL PRACTICE

1. VOCABULARY Copy and complete: Square root functions and cube root functions are examples of __?__ functions.

2. WRITING The graph of $y = \sqrt{x}$ is the graph of $y = a\sqrt{x-h} + k$ with $a = 1$, $h = 0$, and $k = 0$. Predict how the graph of $y = \sqrt{x}$ will change if:

a. $a = -3$ **b.** $h = 2$ **c.** $k = 4$

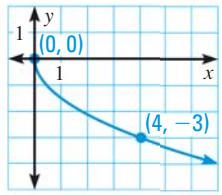
EXAMPLE 1 on p. 446 for Exs. 3–9

SQUARE ROOT FUNCTIONS **Graph the function. Then state the domain and range.**

3. $y = -4\sqrt{x}$ **4.** $f(x) = \frac{1}{2}\sqrt{x}$ **5.** $y = -\frac{4}{5}\sqrt{x}$

6. $y = -6\sqrt{x}$ **7.** $y = 5\sqrt{x}$ **8.** $g(x) = 9\sqrt{x}$

9. MULTIPLE CHOICE The graph of which function is shown?



(A) $y = \frac{3}{4}\sqrt{x}$ **(B)** $y = -\frac{3}{4}\sqrt{x}$

(C) $y = \frac{3}{2}\sqrt{x}$ **(D)** $y = -\frac{3}{2}\sqrt{x}$

EXAMPLE 2 on p. 447 for Exs. 10–15

CUBE ROOT FUNCTIONS **Graph the function. Then state the domain and range.**

10. $y = \frac{1}{4}\sqrt[3]{x}$ **11.** $y = 2\sqrt[3]{x}$ **12.** $f(x) = -5\sqrt[3]{x}$

13. $h(x) = -\frac{1}{7}\sqrt[3]{x}$ **14.** $g(x) = 6\sqrt[3]{x}$ **15.** $y = \frac{7}{9}\sqrt[3]{x}$

EXAMPLES 4 and 5 on p. 448 for Exs. 16–24

RADICAL FUNCTIONS **Graph the function. Then state the domain and range.**

16. $f(x) = 2\sqrt{x-1} + 3$ **17.** $y = (x+1)^{1/2} + 8$ **18.** $y = -4\sqrt{x-5} + 1$

19. $y = \frac{3}{4}x^{1/3} - 1$ **20.** $y = -2\sqrt[3]{x+5} + 5$ **21.** $h(x) = -3\sqrt[3]{x+7} - 6$

22. $y = -\sqrt{x-4} - 7$ **23.** $g(x) = -\frac{1}{3}\sqrt[3]{x} - 6$ **24.** $y = 4\sqrt[3]{x-4} + 5$

25. SHORT RESPONSE *Explain* why there are limitations on the domain and range of the function $y = \sqrt{x-5} + 4$.