

Chapter 7  
Radical Equations and Inequalities

1.  $\frac{\sqrt{k^6}}{\sqrt{m^5}}$

A.  $\frac{k^3\sqrt{m}}{m^2}$

B.  $\frac{k^3}{m^2\sqrt{m}}$

C.  $\frac{k^3\sqrt{m}}{m^3}$

D.  $\frac{k^2\sqrt{m}}{m^2\sqrt{m}}$

Hint

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2. Express  $\sqrt[3]{21}$  using exponents.

A.  $21^{\frac{3}{1}}$

B.  $21^7$

C.  $21^{\frac{1}{2}}$

D.  $21^{\frac{1}{3}}$

3. Solve  $\sqrt{3x+2}-5 \leq -10$ .

A.  $x \leq \frac{98}{3}$

B.  $x \leq -\frac{23}{3}$

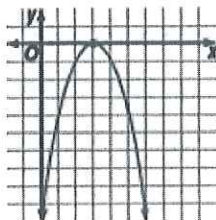
C. no solution

D.  $x \leq \frac{23}{3}$

Hint

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4. Use the graph to determine the solution of  $-x^2 + 6x - 9 = 0$ .



A. 4

B. 3

C. 2

D. -9



11. Given  $f(x) = x^3 - 2x + 1$  and  $g(x) = -x^2 + 5x + 12$ , what is  $(f + g)(x)$ ?

A.  $3x + 13$

B.  $x^3 - x^2 + 3x + 13$

C.  $2x^3 + 3x + 13$

D.  $x^3 + x^2 - 7x - 11$

Hint

12. Given that  $f(x) = x^2 + 2x + 4$  and  $g(x) = x + 5$ , find  $(f \cdot g)(x)$

A.  $x^3 + 7x^2 + 14x + 20$

B.  $x^3 + 2x^2 + 6x + 20$

C.  $x^3 + 2x^2 + 14x + 20$

D.  $x^3 + 7x^2 + 6x + 20$

Hint

13. Given that  $f(x)$  and  $g(x)$  are inverses, which of the following is true?

A.  $\left(\frac{f}{g}\right)(x)$  is undefined

B.  $f(x) \cdot g(x) = x$

C.  $\left(\frac{f}{g}\right)(x) = x$

D.  $[f \circ g](x) = x$

14. Find the inverse of  $f(x) = \frac{1}{4}x - 3$ .

A.  $g(x) = 4x + 12$

B.  $g(x) = \frac{1}{4}x + 3$

C.  $g(x) = \frac{1}{4}x + 12$

D.  $g(x) = 4x + 3$

Hint

15. What is the domain and range of  $y = \sqrt{4x - 8}$ ?

A. D:  $x \geq 2$   
R:  $y \geq 2$

B. D:  $x \geq 2$   
R:  $y \geq 0$

C. D:  $x \geq 0$   
R:  $y \geq 0$

D. D:  $x \geq 0$   
R:  $y \geq 2$

Hint

16. Find the  $x$ - and  $y$ -intercepts of  $y = 2\sqrt{2x - 7}$ .

A.  $x: 7, y: 2\sqrt{7}$

B.  $x: \frac{7}{2}, y: \text{no intercept}$

C.  $x: 2\sqrt{7}, y: \frac{7}{2}$

D.  $x: \text{no intercept}, y: \frac{7}{2}$

1. Answer: C See page 409, Example 1b.
2. Answer: D See page 415, Example 1b.
3. Answer: C See page 424, Example 3.
4. Answer: B See page 246.
5. Answer: D See page 331, Example 1.
6. Answer: A See page 403.
7. Answer: D See page 403, Example 1d.
8. Answer: A See pages 408-409.
9. Answer: D See page 418, Example 5a.
10. Answer: C See page 422, Example 1b.
11. Answer: B See page 384, Example 1a.
12. Answer: A See page 385, Example 2a.
13. Answer: D See page 393.
14. Answer: A See page 392, Example 2a.
15. Answer: B See page 398, Example 1.
16. Answer: B See page 398, Example 1.