Answer Key

Practice B

1. $3x^3 - x^2 + 12x - 2$; $3x^3 - 3x^2 - 2x$

2. $7x^{2/3}$; $x^{2/3}$ **3.** $2x^3 + x^2 + 2x + 3$; $2x^3 - x^2 - 8x + 5$ **4.** $\frac{5}{8}x^{3/4}$; $\frac{3}{8}x^{3/4}$

5. $-x^3 + x^2 + 4x + 2$

6. $x^6 + 3x^4 + 3x^3 + 2x^2 + 9x + 6$

7. $4x^{7/12}$ **8.** $8x^{-1/2} = \dfrac{8}{x^{1/2}}$ **9.** $\dfrac{3x^2 - x + 1}{x + 3}$

10. $\dfrac{3x + 5}{2x^2 - 1}$ **11.** $2x^{5/3}$ **12.** $\dfrac{3^{1/4}}{x}$

13. $f(g(x)) = 6x + 3$, $g(f(x)) = 6x + 1$

14. $f(g(x)) = x^2 - 4x + 5$, $g(f(x)) = x^2 - 1$

15. $f(g(x)) = -(x + 4)^{1/2}$, $g(f(x)) = -x^{1/2} + 4$

16. $f(g(x)) = 3x^{2/5}$, $g(f(x)) = \sqrt{3}\,x^{2/5}$

17. $4x^{1/2} + x + 3$; nonnegative real numbers

18. $x + 3 - 4x^{1/2}$; nonnegative real numbers

19. $4x^{3/2} + 12x^{1/2}$; nonnegative real numbers

20. $\dfrac{x + 3}{4x^{1/2}}$; positive real numbers

21. $4(x + 3)^{1/2}$; real numbers greater than or equal to -3.

22. $4x^{1/2} + 3$; nonnegative real numbers

23. $f(x) = x - 100$ **24.** $g(x) = 0.75x$

25. $g(f(x)) = 0.75x - 75$

26. $f(g(x)) = 0.75x - 100$ **27.** Discount