Answers to assigned even-numbered problems in Chapter 6

Section 6.1

2 Verify.

18 $9x^{1/3} + c.$

20 $\dfrac{-1}{12x^4} + c.$

30 $2x + \dfrac{x^2}{2} + \dfrac{2x^3}{3} + e^x + c.$

32 $\dfrac{3x^4}{2} - \dfrac{3}{x} - \dfrac{x^2}{2} + c.$

36 $\dfrac{3x^{5/3}}{5} + \dfrac{1}{x} + c.$

44 $\dfrac{2x^{3/2}}{3} + 3\ln x - 2e^x + c.$

50 $\dfrac{x^3}{3} + \dfrac{x^2}{2} - x - \ln|x| + c.$

Section 6.2

28 $\dfrac{1}{2}\ln\left(1 + e^{2X}\right) + c.$

30 $e^{-1/x} + c.$

38 $-(\ln x)^{-1} + c.$

42 $-\dfrac{1}{2}e^{-x^2} + \ln\left(e^x + 3\right) + c.$

Section 6.3

14 $\dfrac{77}{8} = 9.625.$

Section 6.4

14 4

16 $e^2 - e - 3/2 \approx 3.17$

28 $\dfrac{31}{4}$

32 $\dfrac{2}{3}$

34 $\dfrac{16}{15}$

38 $\dfrac{1}{\sqrt{2}} + \dfrac{4}{3}$

Section 6.5

10 $\dfrac{175}{4}$

14 $\dfrac{2(50\sqrt{5} - 2\sqrt{2})}{15}$

20 $2\,(e^2 - 1)$.

24 $\ln(1 + e) - \ln 2$

28 $\dfrac{1}{2}(\ln 2)^2$

Section 6.6

6 $\dfrac{16}{3}$

12 $\dfrac{1}{4}$

28 2

36 $\dfrac{32}{3}$

Section 6.7

10 $\dfrac{400000}{-0.1}\left(e^{-1.5}-1\right)=3107479.4$

12 $\dfrac{4800}{0.06}\left(e^{1.2}-1\right)=185609.35$

16 $\dfrac{9600}{-0.1}\left(e^{-1.2}-1\right)=67085.356$ if $r=10\%$; $\dfrac{9600}{-0.05}\left(e^{-0.6}-1\right)\big)=86628.166$ if $r=5\%$.