4.3-4.4 Review Key (p. 313, 41-50, 54, 55)

41. a) 17 b) 7 c) 9 d) 84

42. a) 3 b) 1 c) 0 d) 10

43. $3x+\frac{1}{2}x^2\,|_0^8=(24+32)-(0)=56$

44. $\frac{1}{3}t^3-t\,|_2^3=(9-3)-\left(\frac{8}{3}-2\right)=\frac{16}{3}$ *or* 5.333

45. $t^4-t^2\,|_{-1}^1=(1-1)-(1-1)=0$

46. $\frac{1}{5}x^5+2x^2-6x\,|_2^3=(48.6)-(2.4)=46.2$

47. $\int_4^9 x\sqrt{x}dx=\int_4^9 x^{3/2}dx=\frac{2}{5}x^{5/2}\,|_4^9=\frac{2}{5}\left(\sqrt{9}\right)^5-\frac{2}{5}\left(\sqrt{4}\right)^5=84.5$ *or* $\frac{422}{5}$

48. $-\frac{1}{2}x^{-2}+\frac{1}{2}x^2\,|_1^4=\left(\left(-\frac{1}{2}(4)^{-2}+\frac{1}{2}(4)^2\right)-\left(-\frac{1}{2}(1)^{-2}+\frac{1}{2}(1)^2\right)\right)=-\frac{1}{32}+8-0=7\frac{31}{32}$ *or* 7.968

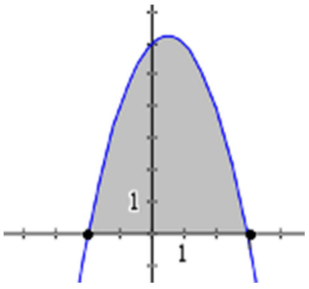
49. $-\cos\theta\,|_0^{3\pi/4}=\left(-\left(-\frac{\sqrt{2}}{2}\right)\right)-(-1)=1+\frac{\sqrt{2}}{2}$ or $\frac{2+\sqrt{2}}{2}$

50. $\tan t\,|_{-\pi/4}^{\pi/4}=2$

54. $-\frac{1}{3}x^3+\frac{1}{2}x^2+6x\,|_{-2}^3=$

$\left(-\frac{1}{3}(3)^3+\frac{1}{2}(3)^2+6(3)\right)-\left(-\frac{1}{3}(-2)^3+\frac{1}{2}(-2)^2+6(-2)\right)=$

$(-9+4.5+18)-\left(\frac{8}{3}+2-12\right)=13.5-\left(-\frac{22}{3}\right)=\frac{125}{6}$ *or* 20.833



55. $\frac{1}{2}x^2-\frac{1}{4}x^4\,|_0^1=(.25)-0=.25$