Name: _____ Date: _____ Row: _____ Period: ____ Assn #: ____

REVIEW WORKSHEET OF SECTIONS 6.1, 6.2, AND 6.5 - ANSWERS

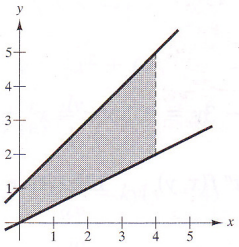
SECTION 6.1

1. $-\int_0^6 (x^2 - 6x)\,dx$

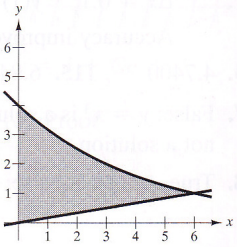
3. $\int_0^3 (-2x^2 + 6x)\,dx$

5. $-6\int_0^1 (x^3 - x)\,dx$

7.

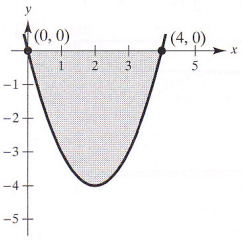


9.

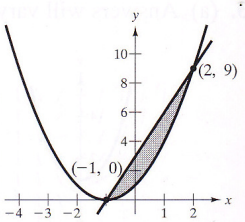


11. d

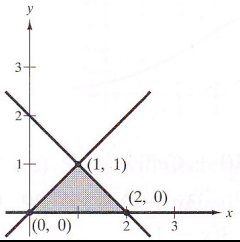
13. $\frac{32}{2}$



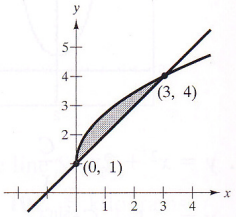
15. $\frac{9}{2}$



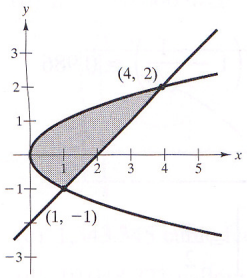
17. 1



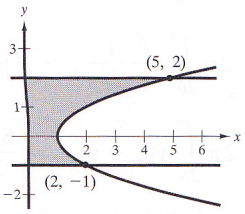
19. $\frac{3}{2}$



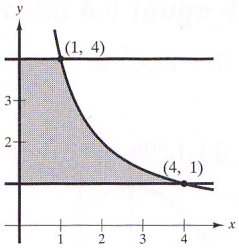
21. $\frac{9}{2}$



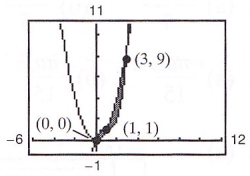
23. 6



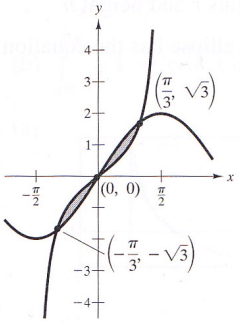
25. $8 \ln 2 \approx 5.545$



27. $\frac{37}{12}$



37. $2(1 - \ln 2) \approx 0.614$



49. $\int_{-2}^{1} [x^3 - (3x - 2)]\,dx = \frac{27}{4}$

SECTION 6.2

1. $\pi\int_0^1 (-x + 1)^2\,dx = \frac{\pi}{3}$

3. $\pi\int_1^4 (\sqrt{x})^2\,dx = \frac{15\pi}{2}$

5. $\pi\int_0^1 [(x^2)^2 - (x^3)^2]\,dx = \frac{2\pi}{35}$

7. $\pi\int_0^4 (\sqrt{y})^2\,dy = 8\pi$

9. $\pi\int_0^1 (y^{3/2})^2\,dy = \frac{\pi}{4}$

11. (a) 8π (b) $\frac{128\pi}{5}$ (c) $\frac{256\pi}{15}$ (d) $\frac{192\pi}{5}$

13. (a) $\frac{32\pi}{3}$ (b) $\frac{64\pi}{3}$

15. 18π

17. $\pi\left(8 \ln 4 - \frac{3}{4}\right) \approx 32.49$

19. $\frac{208\pi}{3}$

21. $\frac{384\pi}{5}$

23. $\pi \ln 4$

25. $\frac{3\pi}{4}$

29. 8π

55. (a) $\frac{128}{3}$ (b) $\frac{32\sqrt{3}}{3}$ (c) $\frac{16\pi}{3}$ (d) $\frac{32}{3}$

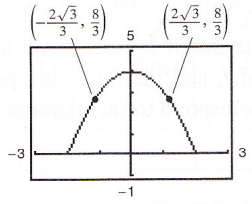
SECTION 6.5

51. 0.4380, 1.7908 **53.** $\pm\arccos\dfrac{\sqrt{\pi}}{2} \approx \pm 0.4817$

55. $\dfrac{3}{\ln 4} \approx 2.1640$

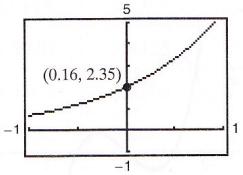
57. Average value $= \frac{8}{3}$

$x = \pm\dfrac{2\sqrt{3}}{3} \approx \pm 1.155$



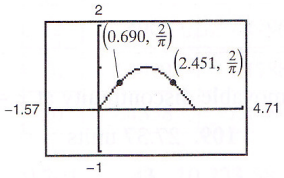
59. Average value $= e - e^{-1}$
≈ 2.3504

$x = \ln\left(\dfrac{e - e^{-1}}{2}\right) \approx 0.1614$



61. Average value $= \dfrac{2}{\pi}$

$x \approx 0.690, x \approx 2.451$



63. -1.5 **65.** 6.5

67. 15.5 **69.** (a) 8 (b) $\frac{4}{3}$ (c) $20, \frac{10}{3}$