Answers to Worksheet 14 - Area Between Two Curves

1)
$$\int_{1}^{3} \frac{4}{x^{2}} dx$$
$$= \frac{8}{3} \approx 2.66$$

2)
$$\int_0^1 \left(-\frac{x^2}{2} + 2 \right) dx$$

1)
$$\int_{1}^{3} \frac{4}{x^{2}} dx$$
 2) $\int_{0}^{1} \left(-\frac{x^{2}}{2} + 2\right) dx$ 3) $\int_{-5}^{-1} \left(\frac{x^{2}}{2} + 3x + \frac{11}{2}\right) dx$
= $\frac{8}{3} \approx 2.667$ = $\frac{11}{6} \approx 1.833$ = $\frac{20}{3} \approx 6.667$

4)
$$\int_{3}^{7} 3\sqrt{x} \, dx$$

= $14\sqrt{7} - 6\sqrt{3} \approx 26.648$

4)
$$\int_{3}^{7} 3\sqrt{x} \, dx$$
 5) $\int_{0}^{2} (-2x^{2} + 4x - (x^{2} - 2x)) \, dx$ 6) $\int_{0}^{8} (\sqrt[3]{x^{2}} - \frac{1}{2}x) \, dx$ = $\frac{16}{5} = 3.2$

6)
$$\int_0^8 \left(\sqrt[3]{x^2} - \frac{1}{2}x \right) dx$$
$$= \frac{16}{5} = 3.2$$

7)
$$\int_{-4}^{-1} \left(\frac{3}{x^2} + 4 \right) dx$$
$$= \frac{57}{4} = 14.25$$

7)
$$\int_{-4}^{-1} \left(\frac{3}{x^2} + 4\right) dx$$

$$= \frac{57}{4} = 14.25$$
8)
$$\int_{0}^{4} \left(-2\sqrt{x} + 3\sqrt{x}\right) dx$$

$$= \frac{16}{3} \approx 5.333$$

9)
$$\int_{1}^{3} (2x+1-(-x^{2}+8x-13)) dx$$

$$= \frac{38}{3} \approx 12.667$$

$$= \frac{3}{3} \approx 12.667$$
11)
$$\int_{-\frac{\pi}{3}}^{\frac{\pi}{2}} (2\cos x + 2\cos x) dx$$

$$= \frac{3}{3} \approx 12.667$$

$$= \frac{$$

10)
$$\int_0^2 (4 - (2x^2 - 4x + 4)) dx$$
$$= \frac{8}{3} \approx 2.667$$

11)
$$\int_{-\frac{\pi}{3}}^{\frac{\pi}{2}} (2\cos x + 2\cos x) dx$$
$$= 4 + 2\sqrt{3} \approx 7.464$$

12)
$$\int_{0}^{4} (3\sqrt{x} + 3\sqrt{x}) dx$$
$$= 32$$