

Answers to Worksheet 14 - Area Between Two Curves

$$1) \int_1^3 \frac{4}{x^2} dx$$

$$= \frac{8}{3} \approx 2.667$$

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

$$= \frac{11}{6} \approx 1.833$$

$$3) \int_{-5}^{-1} \left(\frac{x^2}{2} + 3x + \frac{11}{2} \right) dx$$

$$= \frac{20}{3} \approx 6.667$$

$$4) \int_3^7 3\sqrt{x} dx$$

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

$$5) \int_0^2 (-2x^2 + 4x - (x^2 - 2x)) dx$$

$$= 4$$

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

$$= \frac{16}{5} = 3.2$$

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

$$= \frac{57}{4} = 14.25$$

$$8) \int_0^4 (-2\sqrt{x} + 3\sqrt{x}) dx$$

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

$$9) \int_1^3 (2x + 1 - (-x^2 + 8x - 13)) dx$$

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

$$10) \int_0^2 (4 - (2x^2 - 4x + 4)) dx$$

$$= \frac{8}{3} \approx 2.667$$

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

$$= 4 + 2\sqrt{3} \approx 7.464$$

$$12) \int_0^4 (3\sqrt{x} + 3\sqrt{x}) dx$$

$$= 32$$