

Answers to Calc II Review for Test 1

Answers:

1.  $2\sqrt{2}$       2.  $\int_{-3}^0 (x^3 + 2x^2 - 3x) dx + \int_0^1 (-x^3 - 2x^2 + 3x) dx$

3. 36      4.  $\int_0^1 (2x) dx + \int_1^2 (4 - 2x) dx$       5.  $2\pi \int_0^2 x e^x dx$       6.  $\frac{\pi}{2}(e^4 - 1)$

7. Washer:  $\pi \int_0^1 \left[ (1 - y^2)^2 - (1 - \sqrt{y})^2 \right] dy$  OR shell:  $2\pi \int_0^1 \left[ (1 - x)(\sqrt{x} - x^2) \right] dx$

8.  $\pi \int_1^3 \left[ 1 - \left( 1 - \frac{1}{\sqrt{y}} \right)^2 \right] dy$       9.  $\int_7^{14} \sqrt{x - 6} dx$       10.  $2\pi \int_0^1 \left[ (1 - x^2)\sqrt{1 + 4x^2} \right] dx$

11.  $2\pi \int_0^1 x\sqrt{1 + 4x} dx$       12.  $\frac{81}{10}$       13.  $M_x = \frac{\rho}{14}$ ,  $M_y = \frac{\rho}{5}$ ,  $(\bar{x}, \bar{y}) = \left( \frac{4}{5}, \frac{2}{7} \right)$       14. 12,313.6 lb