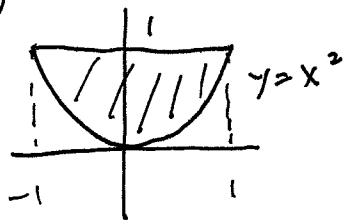


Math 251 Exam 2 Solution, Fall 2011

1. B 2. B 3. A 4. D 5. C 6. C 7. B 8. D

9. a)



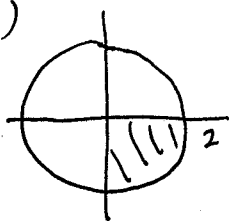
$$\int_{-1}^1 \int_{x^2}^1 \int_0^{x^2+3y^2} 1 \, dz \, dy \, dx$$

b)

$$\int_{-1}^1 \int_{x^2}^1 \int_0^{x^2+3y^2} 1 \, dz \, dy \, dx = \frac{208}{105}$$

10.

a)



$$\int_{\frac{3\pi}{2}}^{2\pi} \int_0^2 \omega(r^2) \, r \, dr \, d\theta$$

or

$$\int_{-\frac{\pi}{2}}^0 \int_0^2 \omega(r^2) \, r \, dr \, d\theta$$

b)

$$\int_{-\frac{\pi}{2}}^0 \int_0^2 \omega(r^2) \, r \, dr \, d\theta = \int_{-\frac{\pi}{2}}^0 \left. \frac{\sin r^2}{2} \right|_{r=0}^{r=2} d\theta$$

$$= \frac{\pi}{4} \sin 4$$