Also study all the homework and quizzes, as well as examples in class notes.

NOTE: Some questions on the actual test may state "Set up the integral only." Since you don't know which kind, for practice do both the set-up and the integration.

1. Find the volume bounded by $z = 1 - y^2$ and the planes $z = 0, x = 2$ and $x = -1$.

   The initial set up of the double integral, using $dA = dydx$ is:

   _____.

2. Integrate the function $z = \sqrt{r}$ over the region inside of $r = 2\theta$, where $0 \leq \theta \leq \pi$.

   The initial set up of the integral, using $dA = rdrd\theta$ is:

   _____.

3. Integrate the function $z = y^2 e^{2xy}$ over the triangle with vertices $(0,0)$, $(0,1)$, and $(1,1)$.

   The initial set up of the integral, using $dA = dxdy$ is:

   _____.

4. Find the integral $\displaystyle\int_{-2\sqrt{\pi}}^{0} \int_{0}^{\sqrt{4\pi - x^2}} \left(2 + 3\sin(x^2 + y^2)\right) dydx$.

   First show the set up of the integral, using only polar variables and $dA = rdrd\theta$:

   _____.

5. Find the integral $\displaystyle\int_0^2 \int_y^2 (6x + 1)dxdy.$

6. Integrate the function $f(x, y, z) = 2x$ over the tetrahedron with vertices $(0, 0, 0)$, $(0, 1, 0)$, $(0, 1, 1)$ and $(1, 1, 0)$.

   The initial set up of the integral, using $dV = dxdzdy$ is:

   _____.

7. Find the volume integral $\displaystyle\int_0^{\pi/6} \int_0^{\pi/2} \int_0^3 \rho^2 \sin \phi \, d\rho d\theta d\phi.$