# Quiz 5

Dec 28, 2011

Show all details.

1. Solve for $\frac{dy}{dx} + xy = x$, $y(0) = -6$.
2. Find the volume enclosed by $\{(x, y, z)|x^2 + y^2 < 9\}$, $\{(x, y, z)|z > 0\}$ and $\{(x, y, z)|x - z > 0\}$. Try plot the region, express the answer as $\int_0^3 A(x)dx$ and find the answer.
3. Give the formula for volume of solid AND for the area of the surface generated by revolving the curve $x = f(y)$, $0 \leq y \leq 1$ around the $y$-axis. Here $f(0) = f(1) = 0$ and $f(y) > 0$ for $0 < y < 1$.
4. Evaluate $\int \frac{dx}{\sqrt{x}(x+1)}$.
5. Evaluate $\int \frac{1}{\sec\theta + \tan\theta} d\theta$.

Calculus I, Fall 2011

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