Calculus I, Fall 2014

Quiz 5

Dec 23, 2014

Show all details.

1. A torus (donut) is generated by revolving the disk $(x-2)^2+y^2 \leq 1$ around the y axis. Find the volume of the torus.
2. Find the surface area of the torus in problem 1.
3. Find the length of the curve $y = \displaystyle\int_0^x \sqrt{\cos t}\, dt$ from $x = 0$ to $x = \frac{\pi}{2}$.
4. Find the solutions for $\dfrac{dy}{dx} = 3x^2 e^{-y}$.
5. Find the solution for $x\dfrac{dy}{dx} + y = e^x$ on $x > 0$ with $y(1) = 1$.

Calculus I, Fall 2014

Quiz 5

Dec 23, 2014

Show all details.

1. A torus (donut) is generated by revolving the disk $(x-2)^2+y^2 \leq 1$ around the y axis. Find the volume of the torus.
2. Find the surface area of the torus in problem 1.
3. Find the length of the curve $y = \displaystyle\int_0^x \sqrt{\cos t}\, dt$ from $x = 0$ to $x = \frac{\pi}{2}$.
4. Find the solutions for $\dfrac{dy}{dx} = 3x^2 e^{-y}$.
5. Find the solution for $x\dfrac{dy}{dx} + y = e^x$ on $x > 0$ with $y(1) = 1$.