

Name: _____

Quiz 5

Math 252

You have 20 minutes to complete this quiz and upload your work to Canvas. Write your answers on a separate sheet of paper and scan them with a scanning app. When you're finished, first check your work if there is time remaining, then turn it in. You may use a scientific calculator, but not a graphing one, and you may not consult other people or the internet. **Show all your work.**

1. (4 points) Write the formula for arc length of a function $f(x)$ between $x = a$ and $x = b$.
2. (8 points) The graph of $x = 2y^2 + 1$ between $y = 0$ and $y = 4$ is rotated about the x -axis. Find the volume using the shell method.
3. (8 points) A disk with radius π has radial density $\rho(r) = \sin(r)$. Find the mass of the disk.