Name: _____

Quiz 4

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) If the graph of $f(x)$ is revolved about the y-axis, which variable should we integrate with respect to in order to have the cross-sections be circles (or washers)? You don't need to explain your reasoning.

2. (8 points) Find the area of the region bounded by the graphs of $f(x) = x^2$ and $g(x) = 2 - x^2$.

3. (8 points) The graph of $y = 2x + 1$ is rotated about the y-axis. Find the volume of the solid produced between $y = 1$ and $y = 5$. You may use any method you like.