MTH 265, Quiz #9, Fall 2018 Name _____

Instructions: Show all work. Use exact answers unless otherwise asked to round.

1. Evaluate $\int\int_R \frac{y^2}{x^2+y^2}\,dA$ where R is the region that lies between $x^2 + y^2 = 4$ and $x^2 + y^2 = 9$ in polar coordinates.

2. Find the volume of the solid bounded between $z = 3x^2 + 3y^2$ and $z = 4 - x^2 - y^2$. Set up a double integral in polar coordinates and evaluate it.