Name:

This quiz covers: and 6.4, 6.5 and 7.1.

Directions: Complete all question and **show all applicable work.** Partial credit will be given. All questions are equally weighted.

1.) Find the arc length of the function $f(x) = \frac{2}{3}x^{\frac{3}{2}}$ on the domain $x \in [0, 2]$.

2.) Find the average value of the function $f(x) = \sqrt{x}$ on the domain $x \in [0, 2]$.

3.) Show $P = Ce^{kt}$ is a solution to the differential equation $\frac{dP}{dt} = kP$ for any C and k.