Quiz 9

Name: _____

1. Compute the following integrals:

   (a) $\int_0^\infty \dfrac{d\theta}{1+\theta^2}$

   (b) $\int_2^4 \dfrac{dx}{\sqrt{4-x}}$

2. Compute the volume when the curve $y = \frac{1}{x}$ on the interval $[1, \infty)$ is revolved about the x-axis.

3. Let X be the number of years that a set of Brand X tires last on a car. Assume that X is a random variable with probability density function

$$f(x) = \begin{cases} \frac{1}{4}xe^{-\frac{x}{2}} & 0 \le x \\ \\ 0 & x < 0 \end{cases}$$

   Then find the probability that a set of tires lasts at least 4 years.