

This quiz has 4 questions of value 3; 10 points is a full score.

1. Compute the length of the graph of $y = \frac{2}{3}x^{3/2}$ for $0 \leq x \leq 15$.
2. Compute the surface area of a sphere of radius 1 by setting up an integral of a surface of revolution and evaluating it.
3. Find the limit:

$$\lim_{x \rightarrow \infty} \frac{1}{x} \sin(x)$$

4. let $x = x(t), y = y(t)$ define a parametric curve in a plane. Assume the values of x and y are given for values of $t = \{t_1, t_2, \dots, t_n\}$ and no other data is provided. Set up a sum approximating the length of the curve between $t = t_1$ and $t = t_n$.