

Name _____

1. (10 points) Set up, but do not evaluate, integrals which represent each of the following quantities.

(a) The average value of the function $g(x) = x + \sin(x)$ over the interval $\left[\frac{\pi}{4}, \frac{\pi}{2}\right]$.

(b) The length of the curve $f(x) = \ln x$ from $x = 2$ to $x = 100$.

(c) The area of the surface generated by revolving the portion of the curve $y = \sqrt{25 - x^2}$ between $x = -2$ and $x = 3$ about the x -axis.