Worksheet 2

July 9, 2003

1. Find the arc length of the graph $f(x) = 3x$, where $x \in [-1, 1]$.

2. Find the arc length of the graph $f(x) = mx + b$, where $x \in [1, 2]$.

3. Find the arc length of the graph $f(x) = \ln(\sin(x))$ from $x = 0$ to $x = Pi$.

4. Find the volume and the area of the surface formed by revolving the graph of $f(x) = x^2$ on the interval $[0, 2]$ around the x-axis.

5. A force of 600 pounds compresses a spring 2 inches from is natural length of 10 inches. Find the work done in compressing the spring an additional 3 inches.