

## Math 2260 Quiz 5

Name \_\_\_\_\_

*Points will be deducted for untidy or disorganized answers*

1. (2 points) A force of 2 N will stretch a rubber band 0.02 m. Assuming that Hooke's Law applies, how far will a 4 N force stretch the rubber band? How much work does it take to stretch the rubber band this far?
2. (3 points) To design the interior surface of a huge stainless-steel tank, you revolve the curve  $y = x^2$ ,  $0 \leq x \leq 4$ , about the  $y$ -axis. The container, with dimensions in meters, is to be filled with seawater, a cubic meter of which weighs 10,000 N. How much work will it take to empty the tank by pumping the water to the tank's top?