

Name: \_\_\_\_\_ Math 1030 Quiz #5 (August 1<sup>st</sup>, 2016)

You may **skip ONE** of the following problems.

1. We have the following supply and demand functions:

$$p_s(x) = 0.1x^3 \quad \text{and} \quad p_d(x) = 1000e^{-x/10}$$

Market equilibrium  $(q_E, p_E) =$  \_\_\_\_\_

The consumer surplus is \$ \_\_\_\_\_

The producer surplus is \$ \_\_\_\_\_

I used the following ALPHA commands...

2. Pseudogreenland has determined that their Lorentz curve is given by  $L(x) = 0.65x^4 + 0.3x^3 + 0.05x$ .

The poorest 30% percent of the population hold \_\_\_\_\_ of the wealth.

The poorest \_\_\_\_\_ percent of the population hold 30% of the wealth.

Pseudogreenland's Gini Index is \_\_\_\_\_.

I used the following ALPHA commands...

3. We know that  $P'(q) = 1150 - 54q + 0.75q^2 - 0.0032q^3$  for some profit function  $P(q)$ . In addition, we also know that  $q = 20$  is a break even quantity for  $P(q)$ .

$P(q) =$  \_\_\_\_\_

I used the following ALPHA commands...