

Econ 30010

Intermediate Microeconomic Theory

Perfect Competition Problems

1. There are 40 firms in a perfectly competitive market. Each firm has total costs of  $C(q) = 75 + 4q^2$ . Demand in the market is  $Q_d = (36300)^{1/2} - .5P$ .

- a. Calculate the short-run equilibrium price, quantity, and economic profit.
- b. Draw the appropriate market and firm level graphs.

The government passes new worker safety standards that cause firm cost to rise to

$$C(q) = 80 + 5q^2.$$

- c. Add this information to your graph from part (b). Calculate the new short-run equilibrium and illustrate this new equilibrium on your graph.
- d. Calculate the new long-run equilibrium price, quantity, firm output level, and number of firms. Illustrate these changes as well in your graph.
- e. Explain in words the short-run and long-run changes due to the new standards and explain the economic reasons for these changes.