Instructions:

There are 1 questions worth a total of 100 points. Answer each question clearly and concisely. You must show your work to receive credit. You are allowed to work with others, but all work must be your own.

Clearly print your name above and in the space provided on the next page. You must turn in both sides of this cover sheet along with your responses. You do not need to turn in the questions, only your responses with the cover sheet. All pages must be stapled to be graded.
Real World Application of Microeconomic Theory

1. A CEO of a software company sent me a cryptic email about how to determine a price for a product they’re developing. Rather than answering the message directly, I tell the CEO that I’ve got a bunch of bright and talented students in my IO course that can provide excellent answers. (I also mention that the consulting fee for my students is probably much less than mine.) The CEO then sends you an almost identical cryptic email which is as follows.

I am curious about pricing frameworks for products without (or with trivially small) marginal costs and very large development costs (music, software, pharmaceuticals, etc) and Dr. Pearcy thought you might be able to help me out. Obviously attempting to derive a price from the supply and demand model where the supply curve is represented by marginal cost does not work well, or simply isn’t used in the real world (I am still waiting for my three cent copy of Microsoft Office). I am just curious if you might be able to suggest any resources explaining, or if there is a name for, a more complete pricing framework that encompasses these IP (Intellectual Property) style goods that I could research?

Answer the following questions using the email above:

(a) How does the pricing problem change if marginal costs are trivially small?

**Solution:** It doesn’t. The company wants to maximize profit so it should set it’s marginal revenue equal to it’s marginal cost.

(b) Similar to the question above, when marginal costs are trivially small is there anything wrong with determining price from supply and demand where supply is represented by marginal costs?

**Solution:** No, everything you’ve learned is still applicable under this framework. The trick is with properly defining the demand/marginal revenue as the firm already knows their cost structure.

(c) What does the CEO mean by “I am still waiting for my three cent copy of Microsoft Office.” and what’s wrong with this train of thought?

**Solution:** The CEO most likely is thinking that firms should set their price equal to their marginal cost. This ends up happening in a perfectly competitive model, but this is clearly not happening in many markets and in most markets for IP goods. The issue is that you should produce the quantity where marginal revenue equals marginal cost and then set the price according to the demand curve at that quantity.

(d) How should this company figure out what price to set for the product and what factors should be considered?
Solution: The firm should produce the quantity where marginal revenue equals marginal cost and then set the price according to the demand curve. The trick lies in estimating the demand and marginal revenue curves. The company might want to consider dynamic aspects of selling the IP good over time (durable goods framework), consider some form of dynamic pricing, price discrimination, quality choice of the IP good where higher quality translates to higher fixed development costs, advertising, or any other relevant factor. The company should also think about their current competition and potential future competition.