Economics 301
Problem Set due November 9, 2018 pricetheory2018@gmail.com

Send questions re. 1) to Paco and questions re. 2) to Rafa.

1) Between 2001 and 2014, the average out of pocket price for prescription opioids (pain killers that can be abused so that the patient experiences a “high”) fell by a factor of five. These prices are based on what patients (as opposed to insurers or government programs) pay per unit of potency.

   Part of the reason that the average price fell is that more people were made eligible for government programs that made opioids and other health goods and services almost free to the patient. Another part is that the wholesale price itself was falling as new products were introduced at a similar price but higher potency per pill.

   At the same time, death per capita from opioids increased by a factor of three.

a. Do you expect opioid price reductions from insurance versus potency to have different effects on opioid deaths? Explain.

b. Some analysts have argued that, for reasons aside from the price changes noted above, people are consuming more opioids because they are more depressed now (and in 2014) than they were in 2001. If they are correct, what does that say about the price elasticity of demand for opioids?

c. Would your answers to (a) and (b) change if the data showed that opioid deaths among the uninsured increased at the same rate as those who had health insurance?

d. Part of the cost of using opioids and related products is forgone earnings, e.g., from employment spells that are interrupted temporarily or, as with death, permanently. Moreover, a segment of society has been experiencing reduced foregone earnings. Discuss how the foregone earnings effect might quantitatively compare to the substitution effect you examined in parts (a) and (b).

2) An industry has many suppliers of the same good. Each supplier's production capacity limit is the same (you may normalize it to one). Each supplier produces with the same two production factors, but with a different production function.

a. Describe how an individual firm's factor demands vary with the output price and the factor rental rates.

b. If the suppliers were using the two factors in fixed proportions, what is the relationship between the industry's factor demand and individual producer's factor demands?

c. What does the cost function look like for this industry?

d. How would your answers be different if the suppliers had no production capacity limit?

e. Revisit part (b) with a production function that has a strictly positive elasticity of substitution between labor and capital.