**QUESTION 1**

a) A competitive firm faces a relatively horizontal demand curve. Do the following conditions make the demand curve flatter (and why)?

i) . Ease of entry.

ii) . A large number of firms in the market.

iii) . The market demand curve is relatively elastic at the equilibrium.

iv) . The supply curves of other firms are relatively elastic.

b) The cost function for Acme Laundry is C(q) = 10 + 10q + q2, so its marginal cost function is MC = 10 + 2q, where q is tons of laundry cleaned.

i) . Derive the firm’s average cost and average variable cost curves.

ii) . What q should the firm choose so as to maximize its profit if the market price is p?

iii) . How much does it produce if the competitive market price is p = 50?

c) Should a firm shut down (and why) if its revenue is R = $1,000 per week, illustrate by graph also.

i) . its variable cost is VC = $500, and its sunk fixed cost is F = $600?

ii) . its variable cost is VC = $1,001, and its sunk fixed cost F = $500?

**QUESTION 2**

i). The estimated equation for the linear U.S. corn demand curve is

Q = 15.6 - 0.5p

where p is the price in dollars per bushel and Q is the quantity demanded in billion bushels per year. What is the elasticity of demand at the point on the demand curve where the price is p = $7.20 per bushel (the price in early 2013) Hint ε = (ΔQ/Δp) / (p /Q) = -b (p/Q)?

ii) The coconut oil demand function is Q = 1,200 - 9.5p + 16.2pp + 0.2Y,

where Q is the quantity of coconut oil demanded in thousands of metric tons per year, p is the price of coconut oil in cents per pound, pp is the price of palm oil in cents per pound, and Y is the income of consumers.

Assume that p is initially 45¢ per pound, pp is 31¢ per pound, and Q is 1,275 thousand metric tons per year. Calculate the income elasticity of demand for coconut oil. (If you do not have all the numbers necessary to calculate numerical answers, write your answers in terms of variables.)

**QUESTION 3**

i). Give as many reasons as you can why we believe that economists assume that the more-is-better property holds and describe how these explanations relate to the results in the Application “You Can’t Have Too Much Money.”

ii). Can an indifference curve be downward sloping in one section, but then bend backward so that it forms a “hook” at the end of the indifference curve?

iii). Give as many reasons as you can why we believe that indifference curves are convex and explain.

iv). Axar spends his money on rice, a giffen good, and all other goods. Show that when the price of rice falls, Axar buys less rice. Decompose this total effect of a price change on his rice consumption into a substitution effect and an income effect

v). Table below gives an individual’s marginal utility schedule for commodity X and commodity Y. Suppose that X and Y are the only commodities available, the price of X and the price of Y are $1, and the individual’s income is $8 per time period and is all spent.

(*a*) Indicate how this individual should spend her income in order to maximize her total utility.

(*b*) What is the total amount of utility received by the individual when in equilibrium? (*c*) State mathematically the equilibrium condition for the consumer.

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| (1) *Q* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total |
| (2) MU*x* | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 60 |
| (3) MU*y* | 19 | 17 | 15 | 13 | 12 | 10 | 8 | 6 | 100 |