Youngberg

Econ 304—Bethany College

**Homework 01**

Answer all the following on a ***typed, stapled*** (if applicable)separate sheet of paper. Make sure that you justify your answers, use your own words, and show your work. All questions are equally weighted.

1. Consider a total cost curve of 4+Q2 and a total revenue equation of Q. Find the total profit or loss. Find the price which results in zero economic profit.

*First, MC = 2Q and MR = P = 1.*

*Thus 2Q = 1, Q = ½.*

*Our average total cost is (4 + (½)2) / ½ = 8.5; our price is 1 so we lose 7.5 per unit. Profit is -7.5(½) = -3.75*

*Or note that total costs is 4 + (½)2 = 4.25 and total revenue is ½(1) so total profit is ½ – 4.25 = -3.75*

*ATC = (4+Q2) / Q; MC = 2Q*

*(4+Q2) / Q = 2Q*

*4+Q2 = 2Q2*

*4 = Q2*

*2 = Q*

*Thus P = MC = 2(2) = 4*

1. One way to interpret the Second Welfare Theorem is that politicians shouldn’t mess around with prices to achieve a just society. Assuming the theorem is correct, why would this be an interpretation?

*The Theorem argues that any equilibrium one might desire comes from Pareto exchanges. The prices to make that outcome will evolve naturally; to get there, all you need is the right endowment. In class, we emphasized changing wealth, such as inheritance. But changing income technically works as well since one’s income is (for the short term, at least) an endowment.*

1. In class I used a P.O.W. camp as a real-world example of a (near) pure exchange economy. What is another example (either from fiction or a real example…do not make up a hypothetical example)? Be sure to indicate what the endowments are.

*One example is when someone rents a room in a house. There is already an allocation of space (say, which shelves in the cabinet each roommate can store food) that is often reallocated amongst the housemates when the new individual (with his/her different utility function) shows up. Cabinet/refrigerator space is the endowment.*

*Another example is children during lunch. Their endowments (provided by their parents) are their bagged lunch (assuming they did not buy lunch themselves). They consume what they want and trade what they don’t.*

1. Consider the following Edgeworth box for Andrea Alpha (red) and Betty Beta (blue). The number adjacent to the curve is the utility value for that curve. How many Pareto efficient points do the illustrated indifference curves show? Draw a ***smooth*** contract curve for this Edgeworth box.

Waterα

Powerα

0

20

40

80

100

60

0

20

40

60

100

80

20

40

60

80

20

40

60

80

Powerβ

Waterβ

100

100

0

0

**3**

**5**

**8**

**9**

**4**

**5**

**8**

**10**

*It shows three points: where 9 is tangent to 5, where 8 is tangent to 8, and where 5 is tangent to 10.*

1. Consider again question 4. Suppose Andrea Alpha is a down-and-out car thief who has trouble making ends meet and Betty Beta is a trophy wife who was born into a wealthy family. We can imagine an egalitarian claiming the best allocation would be fifty units of each good to each consumer. Locate the point or range in the Edgeworth the other three philosophies of fairness we discussed would consider ideal. (For utilitarianism, assume the only indifference curves of relevance are the ones with a defined utility.)

*Utilitarianism—for this one, we want the most total utility. There are three combinations shown: 9 and 5 (13 total); 8 and 8 (16 total); and 5 and 10 (15 total). The one that creates 16 total—about 70 water to Alpha and about 40 power to Alpha—is the highest total utility shown.*

*Rawls—Andrea, who has trouble making ends meet and struggles to survive, is clearly this society’s poorest person (well, she’s worse off than the only other person in this two-person society). Rawls would want a larger share go to her. Note we stay on the contract curve…exactly where we land depends on degrees but, to its logical extreme, Andrea should get 100 of both goods; she should get everything in this allocation.*

*Nozick—In this scenario, the opposite allocation occurs. Most, if not all, of the good should go to Betty. Yes, she may not have a useful job but it’s not a destructive or dishonest job: it doesn’t violate people’s private property or deceive them from making mutually beneficial gains from trade.*