Midterm (answers)
ECNS 204, Snowmester 2020
Exam is due by 11am on Friday, December 18th
Submit to TA at alectruax@gmail.com

Name_____

1.) (10 points) BJ and Sean have the following marginal value schedules for apples. BJ has an initial endowment of 1 apple and Sean has an initial endowment of 8 apples. How many apples will be exchanged and what are the gains from trade?

Q	MV(BJ)	MV(Sean)
1	3	6
2	2	5.50
3	1.50	5.25
4	1	4.50
5	.5	4
6	.25	3.75
7	0	3
8	0	2.5
9	0	2.25
10	0	2

No apples are traded and, therefore, there are no gains from trade.

2.) (10 points) On a recent road trip to Middle of Nowhere, North Dakota, Cheech purchased an ounce of marijuana. Cheech, who is from California, was quite surprised at how high in quality the marijuana was, especially given that North Dakota is not known as a marijuana-growing state. Cheech shared the marijuana with his buddy Chong who later agreed that the marijuana was quite good and in fact better than much of what can be purchased in California, a state widely known for its marijuana production. Give a possible economic explanation (***supported by a numerical example***) for this observation.

Shipping the Good Apples Out problem
-HQ marijuana is more likely to be shipped further distances than LQ marijuana due to a fixed shipping cost. Consequently, the average quality of marijuana is observed to be higher in locations further from marijuana-growing sites, such as North Dakota.

3.) Penny is from the Pacific Northwest and has the following marginal value schedule for King salmon and Atlantic salmon (assume Penny only purchases one type of salmon, not a combination of the two)

Q	MVking	MVatlantic
1	50	25
2	44	22
3	38	19
4	32	16
5	26	13
6	20	10
7	14	7
8	8	4
9	2	1
10	0	0

a.) (5 points) At a price of $38, what is the quantity of King salmon that Penny demands? What is Penny's gain from being able to purchase King salmon at this price?
$Q_{King} = 3$
CS = $18

b.) (10 points) What would the price of Atlantic salmon have to be for Penny to be indifferent between purchasing King or Atlantic salmon?
$P_{Atlantic} = \$16$

4.) Suppose global warming produces conditions favorable for coffee growing in the southern United States, and world coffee production increases 10% as a result. Assume the elasticity of demand for coffee is -0.2.

a.) (5 points) If the average price of coffee now is $5.00/lb., what would the price be after this added production occurs?

$\varepsilon = \%\Delta Q / \%\Delta P$

⇨ $-2 = (.10)/[(P_2 - \$5)/\$5]$

⇨ $P_2 = \$2.50$

b.) (5 points) Suppose tea and coffee are substitute goods. What effect will this have on the price of tea and the amount of tea consumed? ***Support your answer with a graphical analysis. No graph, no points.***

The demand for tea will fall, leading to a reduction in the price of tea and the amount of tea consumed.

5.) (10 points) NBA superstar Giannis Antetokounmpo just reached an agreement with the Milwaukee Bucks on a five-year contract extension worth $228 million dollars. This amount would be enough to finance a small medical clinic of probably around 20 doctors and 20 nurses plus equipment. Does this imply Americans, and people in Milwaukee in particular, think that basketball is more important than medical services? ***Support your answer with a graphical analysis. No graphs, no points.***

-Just another D-W paradox problem.

6.) Andy consumes only two goods, X and Y. His indifference curves have the usual shape. He prefers basket (X=3,Y=1) to basket (2,2).

a.) (5 points) Is it possible to tell whether Andy prefers basket (1,3) to (3,1)?

b.) (5 points) Is it possible to tell whether Andy prefers basket (1,3) to (2,2)?

You must support your answers to a.) and b.) with a **graph**.

a.) Andy prefers basket (3,1) to (1,3)
b.) Andy prefers basket (2,2) to (1,3)

This can easily be shown in a graph with three indifference curves. The most leftward IC will have one point on it reflecting the bundle (X=1, Y=3). The middle IC will have a point on it reflecting the bundle (X=2, Y=2). The most rightward IC will have one point on it reflecting the bundle (X=3, Y=1).

7.) The demand curve for Black Diamond camalots (devices used to protect falls in rock climbing) is as follows:

MV	$120	$100	$80	$60	$40	$20
Q	4	5	6	7	8	9

a.) (5 points) The current price of a "cam" is $80. Calculate the demand elasticity at this price. Is the demand elastic or inelastic at this price?

elasticity of demand at this price = ((7-6)/6)/((60-80)/80) = -.67 which is inelastic

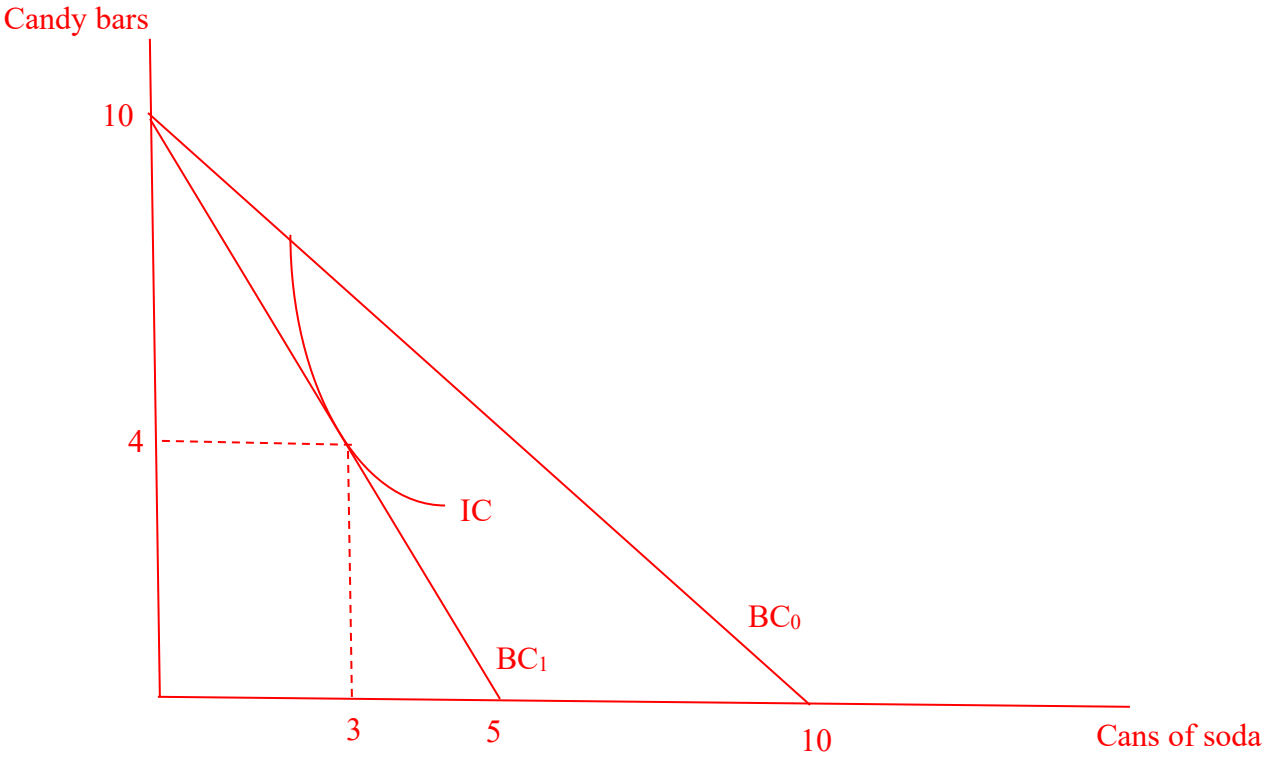
b.) (5 points) Suppose that Black Diamond has a huge fire in their main manufacturing plant destroying many of the machines that produce cams. As a result, the supply of cams on the market is reduced. What happens to the total amount that people spend (i.e total expenditures) on cams? ***Support your answer with a graph. No graph, no points.***

Need to draw a graph where the supply curve shifts in and the area for TE increases because the demand curve is inelastic. Remember, when price increases and the demand is inelastic, then TE will necessarily increase.

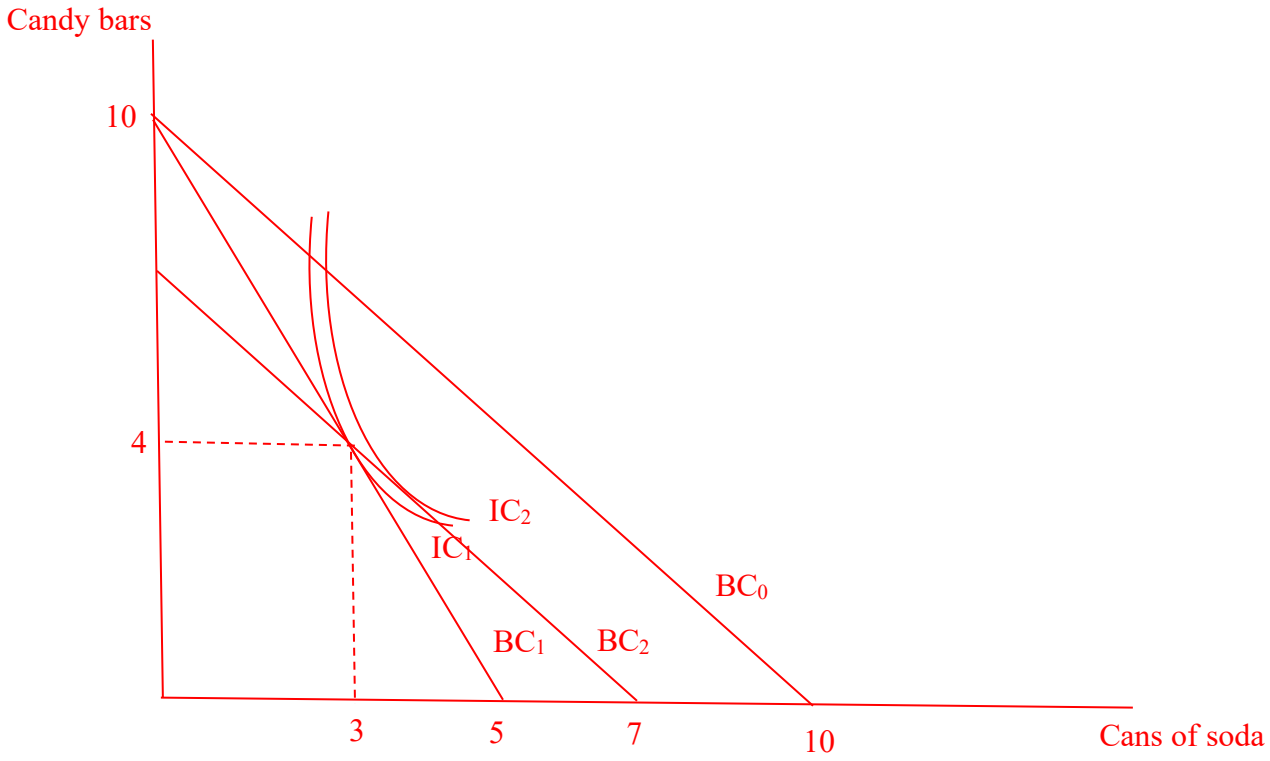
8.) Suppose your income per day is $10 and you spend it entirely on sodas and candy bars. The current price of soda is $1/can and the current price of candy bars is $1/bar.

Now suppose that a local bully starts demanding that you buy him a soda for every soda you buy yourself. Therefore, it now costs you $2/soda. In this bullying scenario, suppose that you buy 3 sodas per day.

a.) (5 points) Illustrate the bully's effect on your original budget line and indicate your new optimum with an indifference curve. (Note: For the ease of grading this problem, please put candy bars on the vertical axis and sodas on the horizontal axis).



b.) (10 points) Suppose that the bully has decided to change his bullying policy. He now demands that you buy him 3 sodas per day, regardless of how many you buy yourself. Illustrate how this change in bullying policy affects the budget line and ultimately show whether you are made better or worse off under this new policy (i.e., which bullying policy do you prefer?).



The new BC is represented by a parallel shift inward from BC_0 by 3 units. Because you can obtain a higher IC under this scenario, the new bullying policy of a flat 3 sodas/day rate is preferred.