Chapter 7: Utility Maximization

As we consume more stuff. We get more utility (happiness or satisfaction)

But, as we consume more of the same stuff, each additional unit gives us less ***additional utility***.
--The Law of Diminishing Marginal Utility

We could eventually get zero additional utility from say, the 10th bottle of water. (Saturation point, MU=0)
We *could* get NEGATIVE additional utility from say, the 10th slice of pizza.(Eating it makes you feel worse)

There might be some exceptions to the The Law of Diminishing Marginal Utility. This is ONE way we might explain drug addiction.

Chapter 7: How should people choose to maximize their Utility?

Answer: Balance what they WANT to have (Benefits, Utility) with what they CAN have (Costs, Budget)

Step 1: Let's Understand what we CAN buy with our budgets.

Production Possibility Frontier: A line showing the maximum amount of various combinations of goods that can be **produced** (in a country, or by a person)

Consumption Possibility Frontier: A line showing the maximum amount of combinations of goods that can be **purchased**: A "Budget Line" or "Budget Constraint" (See pages 7-8)

A couple of ways to think about a budget line:

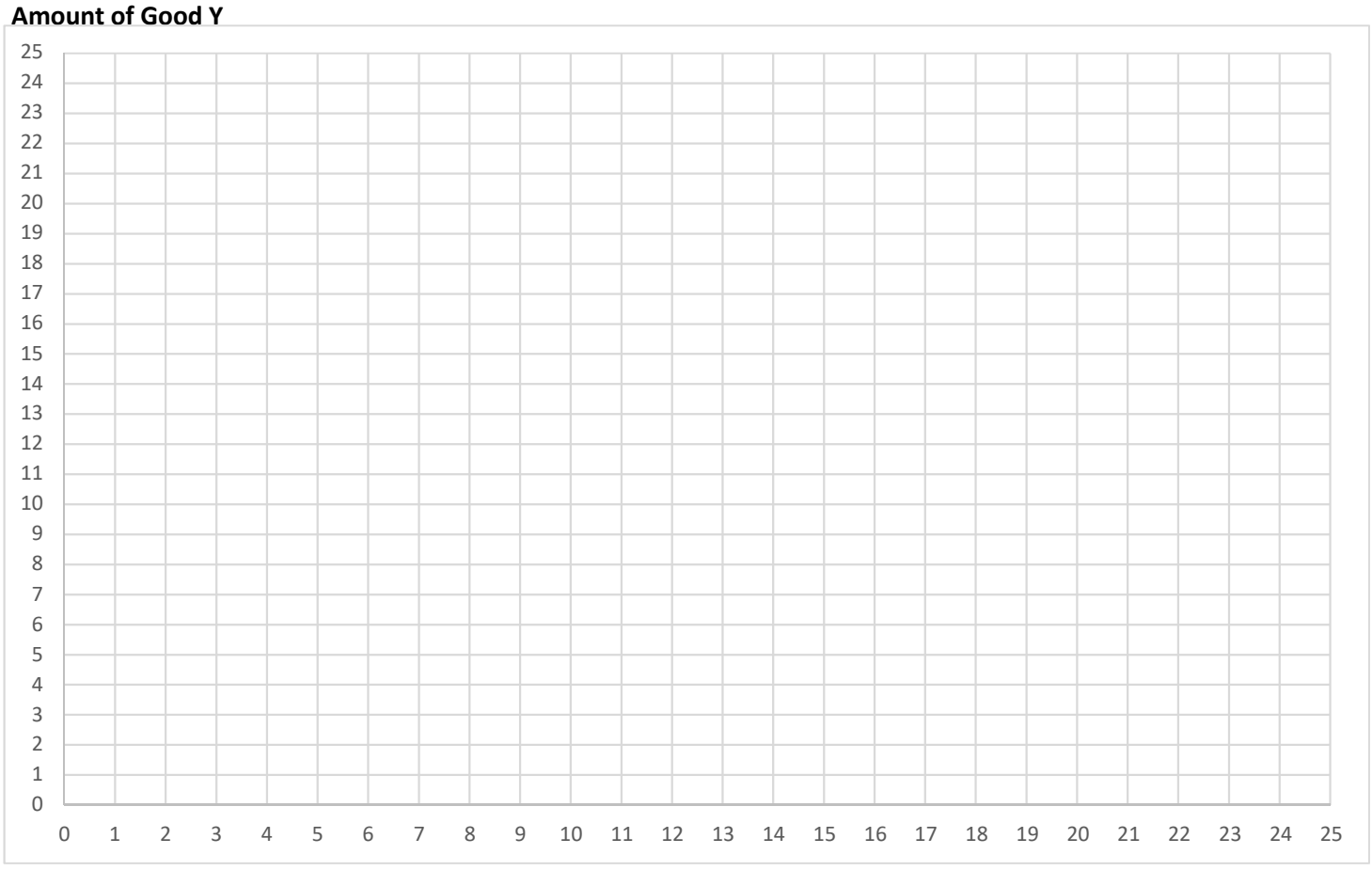
1) Graph it: If I buy zero X how many Y could I buy? (Budget/Price Y)
   If I buy zero Y how many X could I buy? (Budget/Price X)
2) Equation: Px*X + Py*Y = Budget (technically ≤Budget)

The Slope = -Px/Py Solve for Y, $\mathbf{Y=B/P_y - \frac{P_x}{P_y}X}$

1) For example, suppose B=$200, and P_x=$10 and P_y=$20.

2) Now, what happens if our budget is cut to $150?

3) Now, what happens if the price of y decreases to $10?



Chapter 7: Utility Theory and Demand

Total Utility Table

Beer	Pretzels: 0	1	2	3	4	5	6
6	81	101	116	126	131	132	132
5	80	100	115	125	130	131	131
4	75	95	110	120	125	126	126
3	65	85	100	110	115	116	116
2	50	70	85	95	100	101	101
1	30	50	65	75	80	81	81
0	0	20	35	45	50	51	51

Method 1: The Burkey Method with Budget Lines.

Method 2: Calculating Marginal Utility per dollar.

Method 2: Marginal Utility per Dollar

Calculate the MU of each pretzel and each beer. Does the MU of each beer depend on the quantity of pretzels eaten? Should it?

By always purchasing the item with the highest marginal utility ***per dollar***, when we have spent all of our money, the marginal utility per dollar will be almost equal for each good.

Quantity	MU Beer		MU Pretzel	
1				
2				
3				
4				
5				
6				

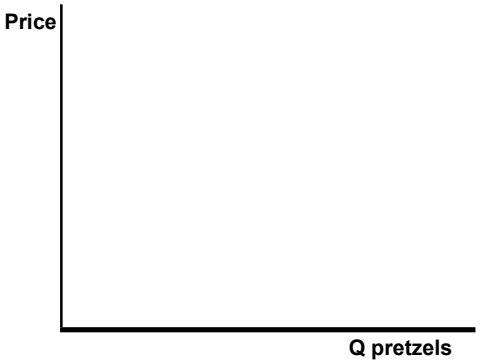
Scenario 1: Budget $10, Price of Beer $2, Price of Pretzels $2

Scenario 2: "Pure" income effect: Budget $12, Price of Beer $2, Price of Pretzels $2

Scenario 3: Budget $10, Price of Beer $2, Price of Pretzels $1

Scenario 4: Budget $10, Price of Beer $2, Price of Pretzels $0 (Free!)

Scenario 5: Budget $20, Price of Beer $4, Price of Pretzels $4



Now: Use #1, 3, and 4 to Construct a Demand Curve for Pretzels!!
Use #2 to show how the demand curve shifts!

So, we have seen theoretically where demand comes from. We have also seen that when you are optimizing, the marginal utility per dollar (bang for your buck) should be approximately equal for all goods.
$MU_a/P_a = MU_b/P_b$