A Formal Explanation to the Law of Demand and the Giffen Paradox

*Definition of Key Concepts***:**

1. Nominal Income: The value of a consumer's income measured in terms of current dollars and cents. For example, Mr. Jones monthly income is $25, 000.

2. Real Income: The purchasing power, that is, the amount of goods and services the income of a consumer can purchase or the value of a consumer income in terms of constant dollars--income adjusted to changes in prices.

3. The Substitution Effect (of a price change): refers to the change in *the quantity demanded* of a product resulting exclusively from a change in its *price* when the consumer's real income is held constant.

- *The substitution effect is always negative. That is, it changes in the opposite direction form the change in price.*

4. The Income Effect (of a price change): refers to the change in the *quantity demanded* of a product exclusively associated with a change in *real income*.

- *The income effect can be either negative or positive depending whether the good (product) under consideration is inferior or normal.*

5. Normal Good: A good is said to be normal if its consumption increases or decreases with an increase or decrease in income, respectively. Thus, the consumption of a normal good and changes in consumer income are *positively* related.

6. Inferior Good: A good is said to be inferior if its consumption increases or decreases with a decrease or an increase in income, respectively. Thus, the consumption of an inferior good and changes in consumer income are *negatively* related.

7. The Price Consumption Curve: is the locus of *utility maximizing* combinations of products when changes in one of the product price occur holding all other factor affecting demand constant.

AN EXPLANATION FOR WHY THE DEMAND CURVE FOR A CONSUMER IS NEGATIVELY SLOPED.

Case I: Good X is Normal

1. Price Change	Substitution Effect (a)	Income Effect (b)	**2. Total Effect (a + b)**	Implication
Price of good X decreases	Purchase more of good X	Purchase more of good X	**Purchase more of good X**	The price and quantity demanded of good X are inversely related.
Price of good X increases	Purchase less of good X	Purchase less of good X	**Purchase less of good X**	

Case II: Good X is Inferior and Substitution Effect Outweighs Income Effect

1. Price Change	Substitution Effect (a)	Income Effect (b)	**2. Total Effect (a + b)**	Implication
Price of good X decreases	Purchase more of good X	Purchase less of good X	**Purchase more of good X.**	The price and quantity demanded of good X are inversely related.
Price of good X increases	Purchase less of good X	Purchase more of good X	**Purchase less of good X**	

Case III. Good X is Inferior and Income Effect Outweighs Substitution Effect

1. Price Change	Substitution Effect (a)	Income Effect (b)	**2. Total Effect (a + b)**	Implication
Price of good X decreases	Purchase more of good X	Purchase less of good X	**Purchase less of good X**.	Price and quantity demand are directly related (the Giffen Paradox)
Price of good X increases	Purchase less of good X	Purchase more of good X.	**Purchase more of good X**	