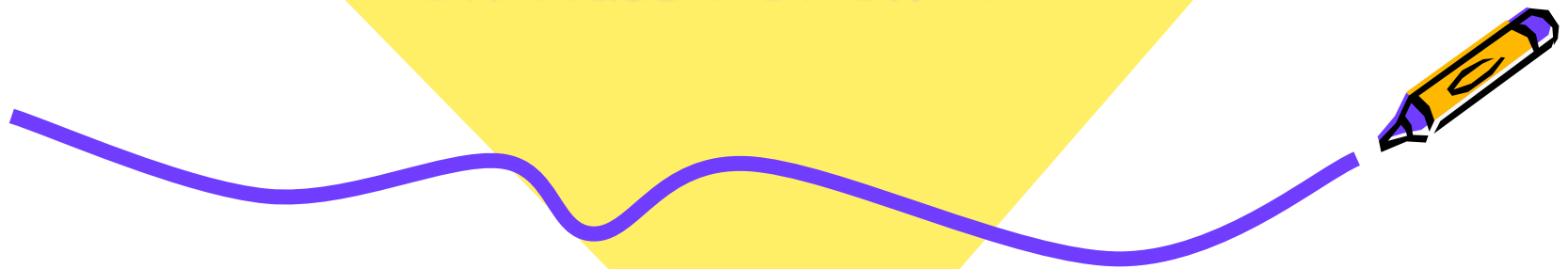# A.P. Microeconomics

In Class Review #2

Pricing

1. Pricing system serves as a rationing device

- The market decides who gets g&s by which households are willing to pay the price for it!!

Pricing

a. Even when price ceilings are implemented to keep prices at a "fair" level, the rationing system will usually win out.

- The Market will find a way to get to its happy place, even if it's illegal!!
  - Ex) black markets, scalping, eBay, etc.
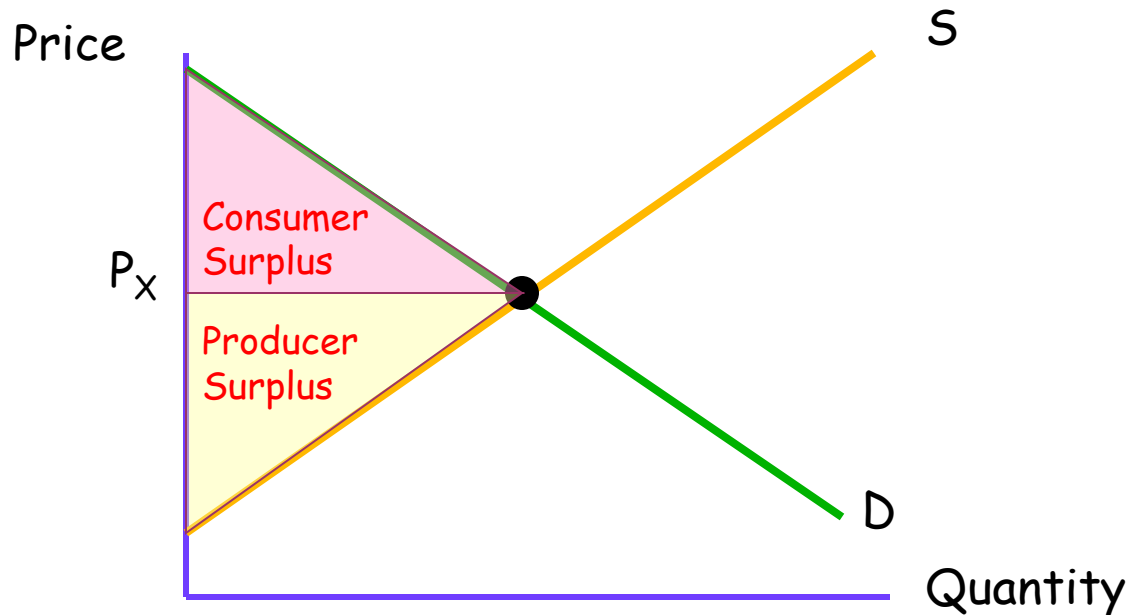
Pricing

- <u>Consumer Surplus</u>
  The difference btwn utility gained and price paid (what we are willing to pay over actual price)

- <u>Producer Surplus</u>
  The difference btwn what producers are willing to sell at and actual price

Price

P_X

Consumer Surplus

Producer Surplus

S

D

Quantity

Elasticity

- How sensitive are firms and households to changes in price (Laws of Supply and Demand)
- To what degree will quantity change?
- Formula

$$\frac{\%\Delta QD}{\%\Delta P}$$

| Term	Def	Formula	Examples	Graph
Elastic	%ΔQD > %ΔP Big change in quantity dem	$E_D > 1$	Not urgent, Large portion of budget, Lots of substitutes	Low slope, Higher priced parts of line
Inelastic	%ΔQD < %ΔP Little change in quantity dem	$0 < E_D < 1$	Urgent, no substitutes, small portion of budget, medical needs	Steep slope, lower priced parts of line
Unit Elastic	%ΔQD = %ΔP Same change in quantity dem	$E_D = 1$	Proportional change	45° angle
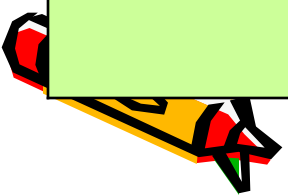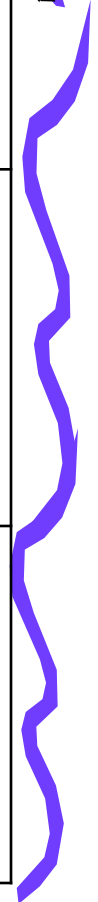
Term	Def	Formula	Examples	Graph
Perfectly Elastic	$\%\Delta P = 0$	$E_D = \infty$	Perfect Subs, fruits & veggies	Horizontal Line
Perfectly Inelastic	$\%\Delta QD = 0$	$E_D = 0$	No Subs, unique – limited product	Vertical Line
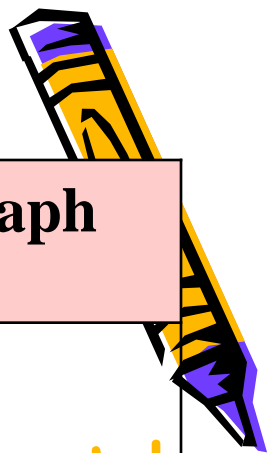
Factors Affecting Elasticity

1. Substitutability
2. Proportion of Income
3. Luxury vs. Necessity
4. Addictiveness
5. Time
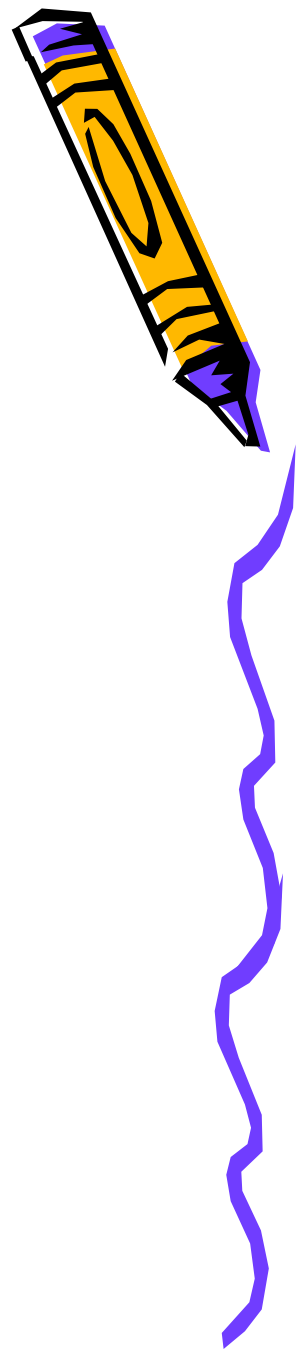
Practice Problems:

1. Price of strawberries increase from $3 to $4 per pint and sales of strawberries decrease by 50%, how elastic are demand for strawberries?

$$\frac{\dfrac{Q_1 - Q_2}{Q_1}}{\dfrac{P_1 - P_2}{P_1}}$$

= .66

E_D = Inelastic

OR - %ΔQD is +33%, %ΔP = 50%

Since quantity changed less than price it is inelastic

Practice Problem

1. Price of iPhones decrease by 25% and sales increase by 33%, how elastic is the demand for iPhones?

- .33/.25 = 1.32 = Elastic
- OR, %ΔQD is +33%, %ΔP = 25%
- Since quantity changed greater than price it is elastic

Demand Graph & Elasticity

$TR = PQ$

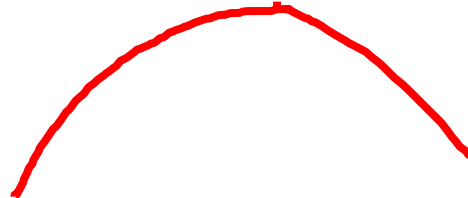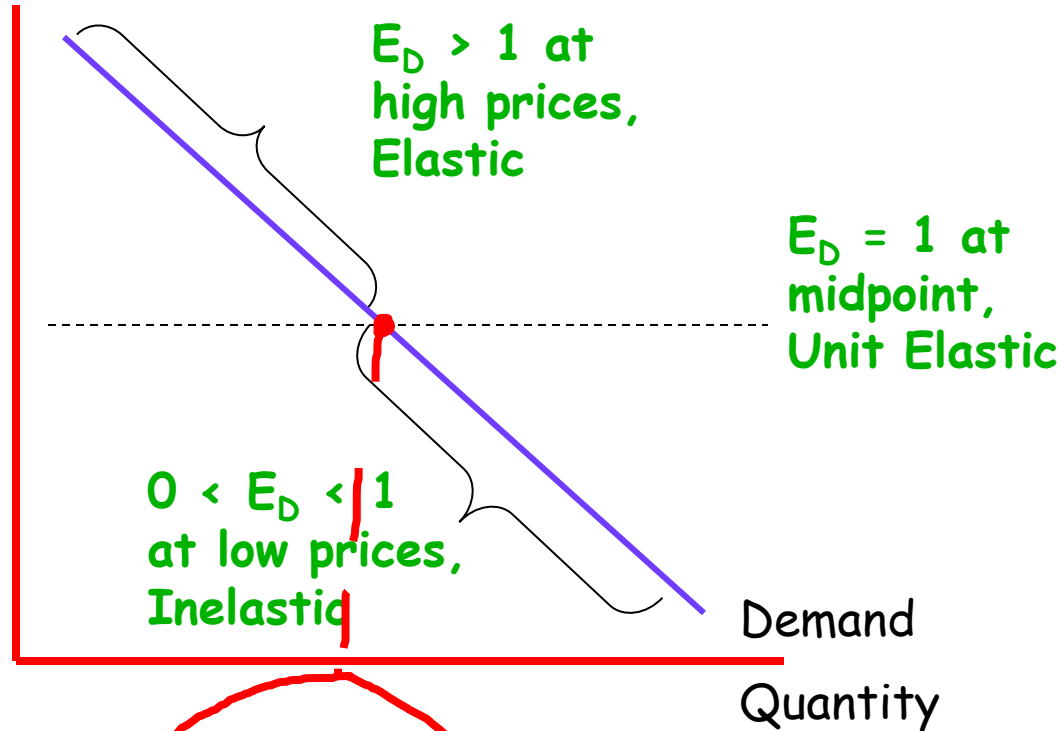$E = P\downarrow, TR\uparrow$

Find Midpoint of the line!!!

$I = P\downarrow, TR\downarrow$

Price

$E_D > 1$ at high prices, Elastic

$E_D = 1$ at midpoint, Unit Elastic

$0 < E_D < 1$ at low prices, Inelastic

Demand

Quantity

Revenue Test

- Total Revenue = p × q

Price	Quantity	Total Revenue
$1	10	$10
2	8	$16
3	6	$18
4	4	$16
5	2	$10
6	0	$0

Revenue Test

- Price increase from $1 to $2, type of elasticity and what happens to TR?

  E_D = Inelastic and TR Increased

- Price change from $3 to $4, type of elasticity and what happens to TR?
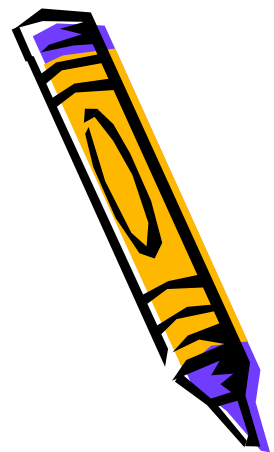
  E_D = Unit Elastic and TR Decreased

Price change from $4 to $5, type of elasticity and what happens to TR?

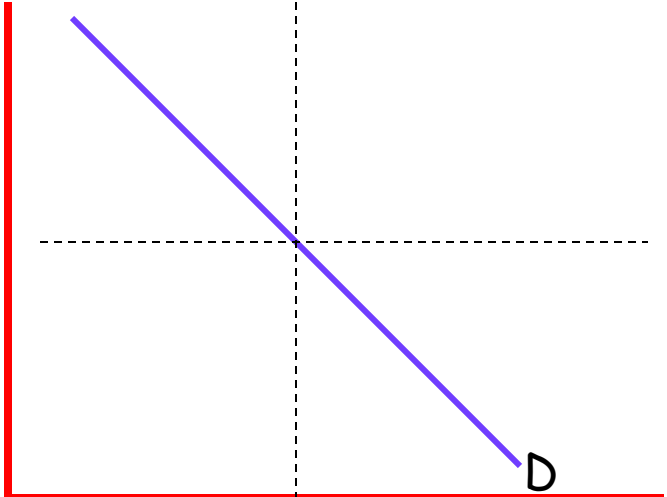 E_D = Elastic and TR Decreased

How can a firm increase Revenue?

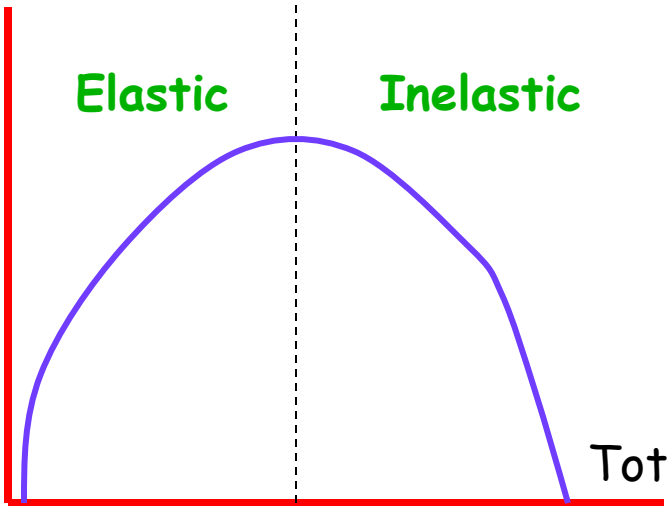### *If Elastic – Decrease Price*

If Inelastic – Raise Price!!!

Price

Quantity

D

Revenue

Elastic   **Inelastic**

Total Revenue

Output

Unit
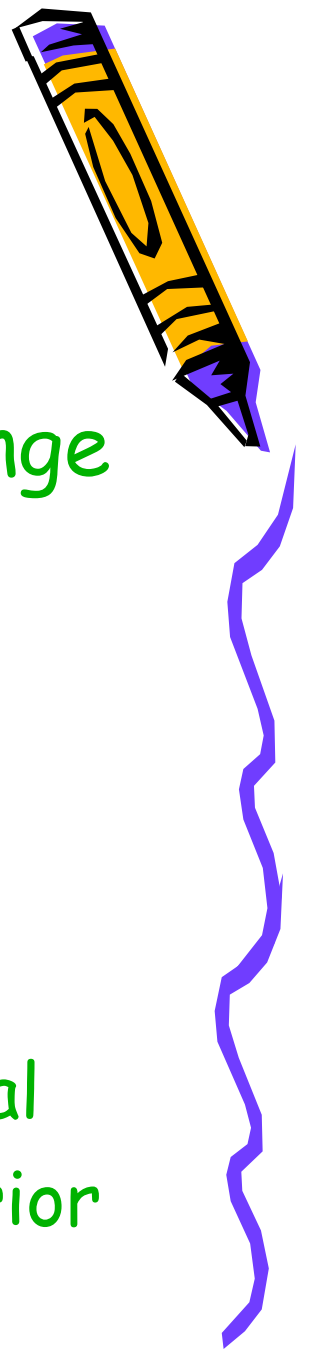Elastic

Cross-Elasticity of Demand

- Measuring the change in quantity of one good when the price of a related good is changed.

$$\frac{\% \Delta QD_y}{\% \Delta P_X}$$

RULES: positive sign goods are subs

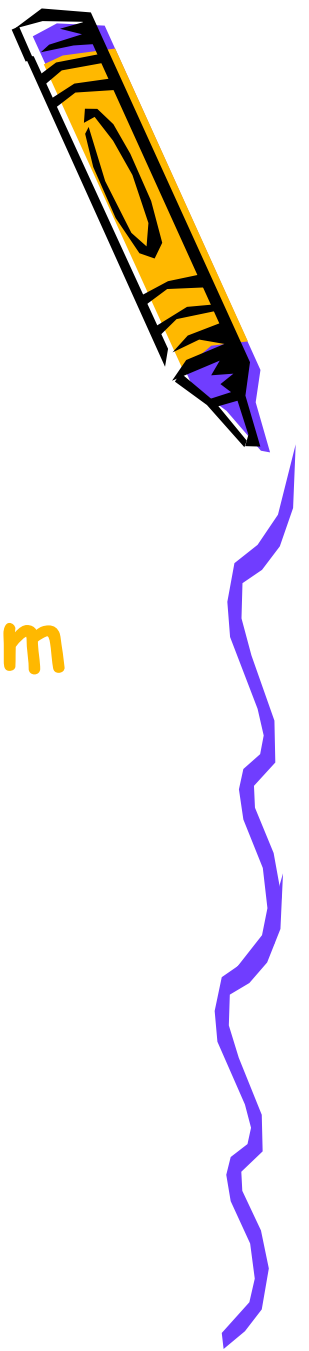negative sign goods are comps

Income Elasticity of Demand

- Compares change in income to change in quantity demanded
  - Normal good = buy more with more $
  - Inferior good = buy more with less $

$$\frac{\%\Delta QD}{\%\Delta I}$$

RULES: positive sign = goods are normal

negative sign = goods are inferior

Utility, etc.

- Utility: satisfaction from consumption
- Marginal Utility: satisfaction from consumption of additional units
- Diminishing Marginal Utility: decreasing satisfaction from consumption of additional units

Utility-Maximizing Rule

- Ranking choices when consuming many goods; where will households get most utility per dollar:

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B} = \frac{MU_C}{P_C}$$
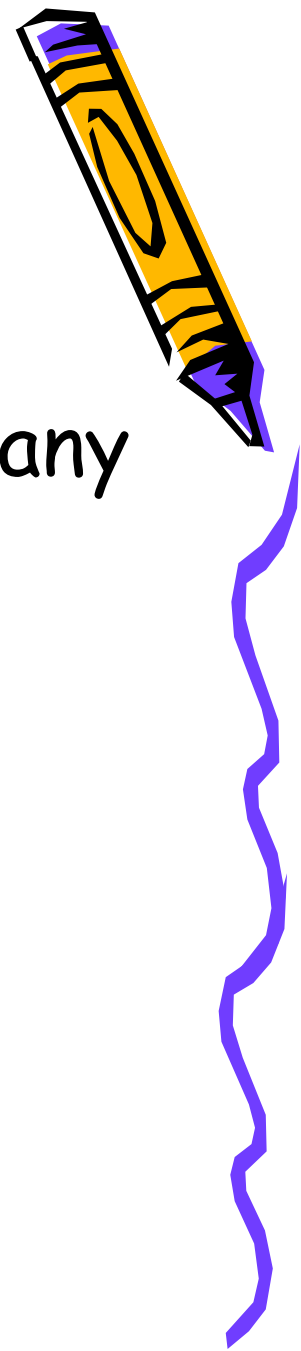
Budget Constraint: $52
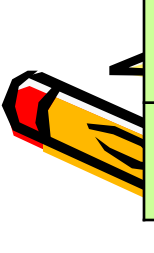# Price of CDs: $8
Price of Candy: $4

Units of CDs	Utility	Marginal Utility MU	MU/P	Units of Candy	Utility	Marginal Utility MU	MU/P
1	56	56	7	1	32	32	8
2	104	48	6	2	60	28	7
3	136	32	4	3	84	24	6
4	160	24	3	4	104	20	5
5	180	20	2.5	5	116	12	3
6	196	16	2	6	126	10	2.5
7	208	12	1.5	7	134	8	2

Income Effect

- As the price of a particular good decreases, a consumer can afford more of it and other goods
  - Ex) a usually expense (rent) gets cheaper so you have more money to spend!!

Substitution Effect

- **As the price of a particular good decreases, a consumer may buy more of this good relative to the price of a substitute good**
  - **Ex) moving to a cheaper apartment**