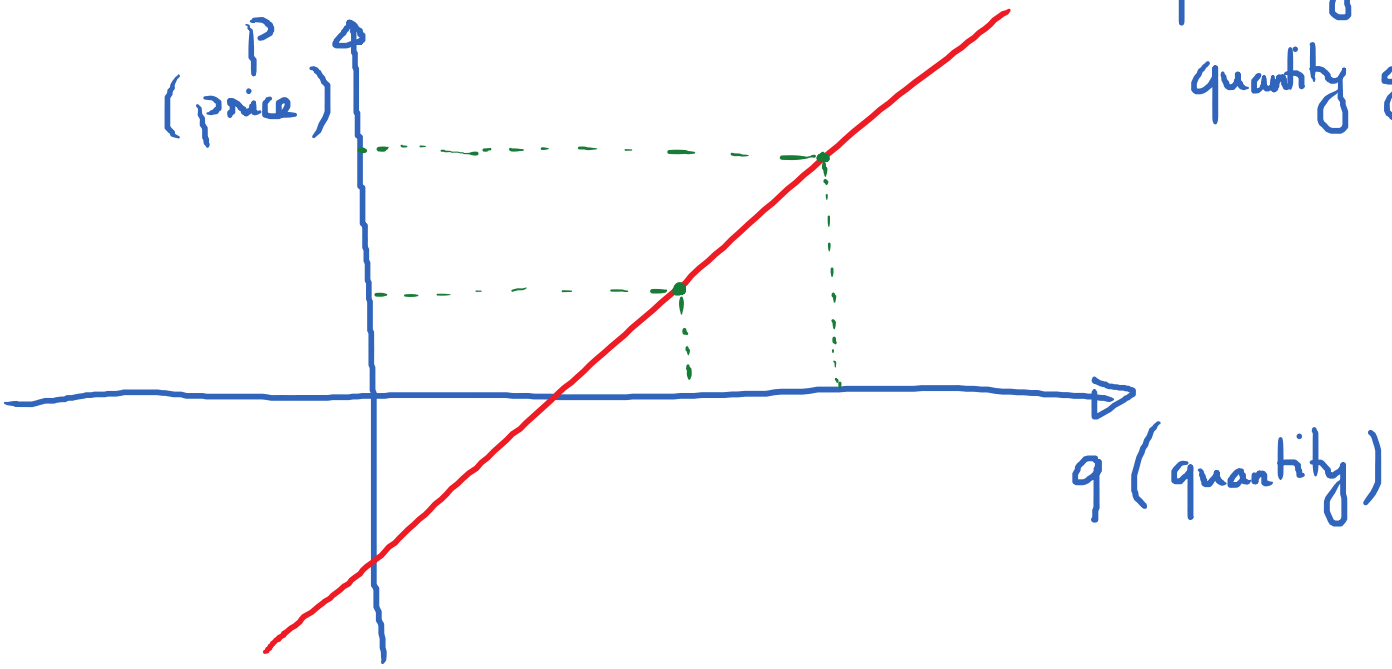
Supply Curve

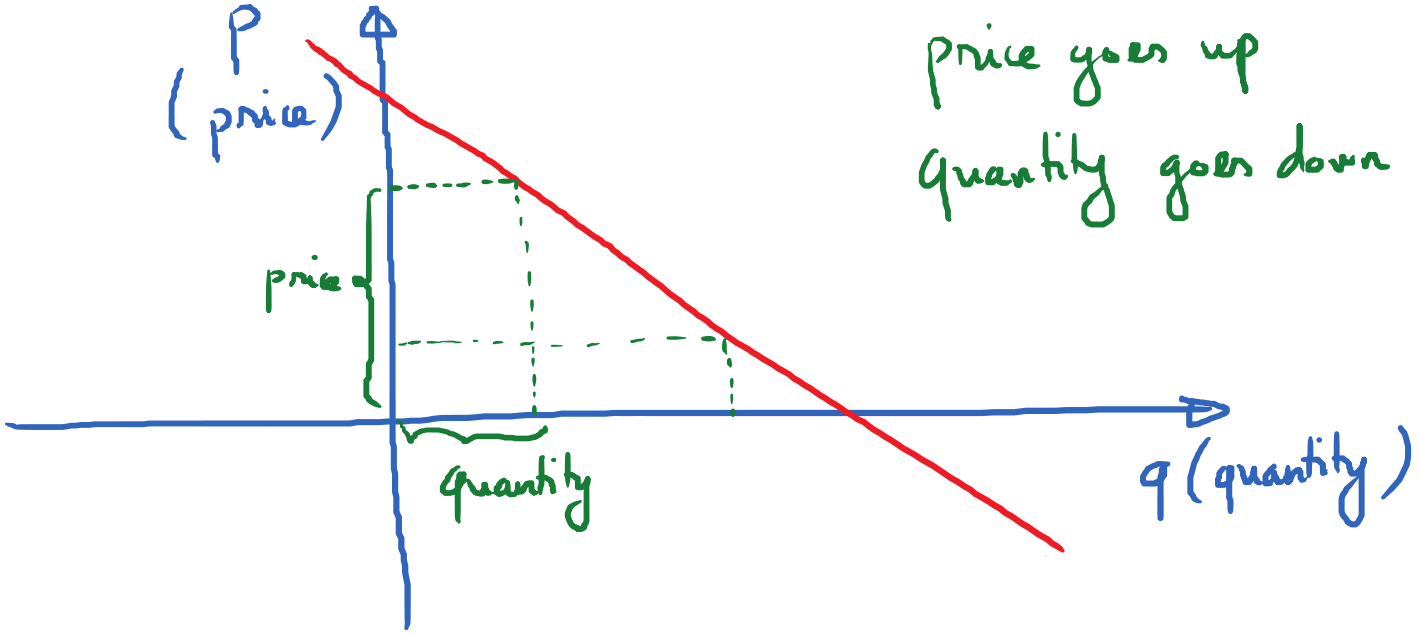
Tuesday, September 19, 2017 9:07 AM

price goes up
quantity goes up

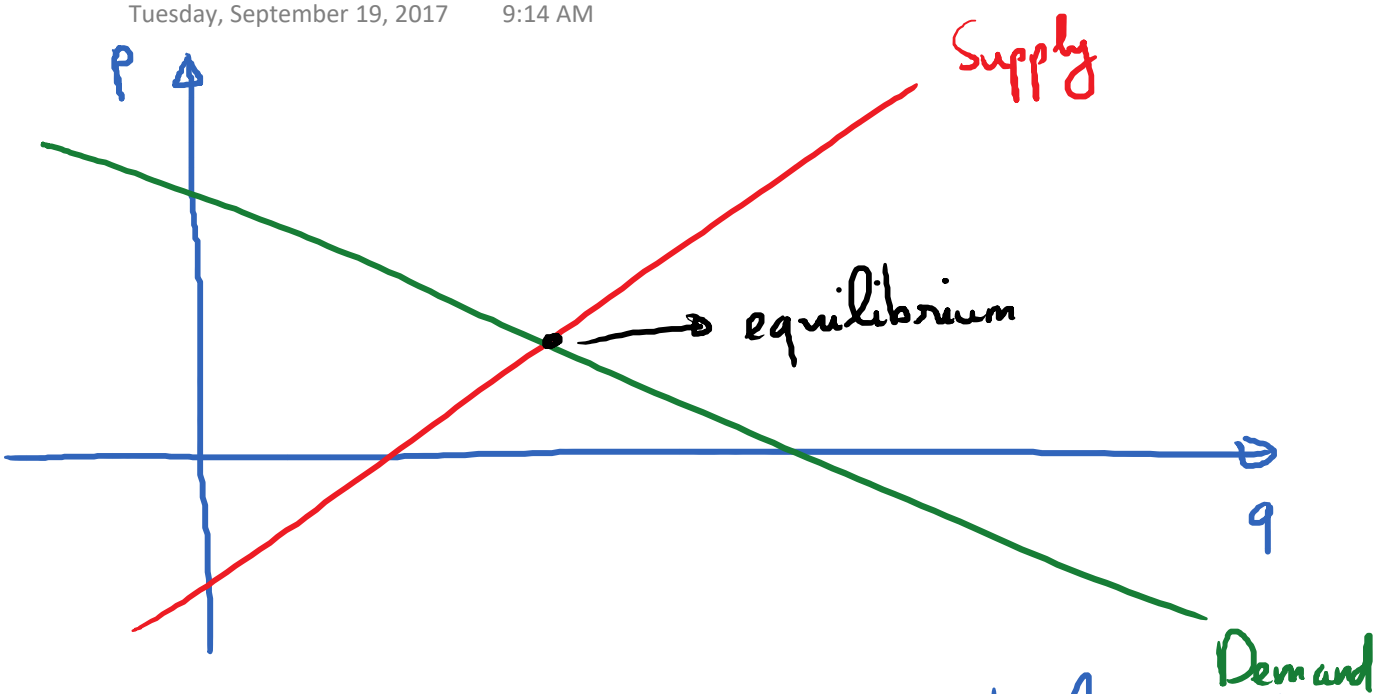


Linear Demand Curve: Consumer perspective

price goes up
Quantity goes down



Equilibrium → point where supply and demand meet



E.g. Supply equation for a particular product

$$p = 1.04q - 7.03$$ (q is in thousands of units)

Demand equation for the same product is

$$p = -0.81q + 7.5$$

Find the equilibrium point.

(Round to 1 decimal place)

$$\begin{cases} p = 1.04q - 7.03 \\ p = -0.81q + 7.5 \end{cases} \rightarrow \begin{cases} p = 1.04q - 7.03 \\ -p = 0.81q - 7.5 \end{cases}$$

$$0 = 1.85q - 14.53$$

$$1.85q = 14.53$$

$$\frac{14.53}{1.85} = \frac{1.85q}{1.85}$$

q =

E.g. Animals in a clinic need to be kept in a strict diet.

Each animal should receive exactly 35 grams of protein and 5 grams of fat.

Lab technician are able to by 2 types of food mixes: Mix A has 20% protein and 8% fat.

Mix B has 40% protein and 4% fat.

Q. How many grams of each mix should be used to obtain the right diet for the animal.

How many grams of mix A? x

How many grams of mix B? y

The amount of protein in x grams of mix A:

$0.2x$

The amount of fat in x grams of mix A is $0.08x$

The amount of protein in y grams of mix B is $0.4y$.

The amount of fat in y grams of mix B is $0.04y$.

Total amount of protein allowed:

$$0.2x + 0.4y = 35$$

Total amount of fat allowed.

$$0.08x + 0.04y = 5.$$

Solve the system $\begin{cases} 0.2x + 0.4y = 35 \\ 0.08x + 0.04y = 5. \end{cases}$

$x = 25$ grams

$y = 75$ grams