$5x-2y \le 75$

$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$

$S = Pe^{rt}$

$APY = \left(1 + \frac{r}{n}\right)^n - 1$
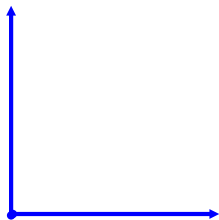
Math 1090 ~ Business Algebra

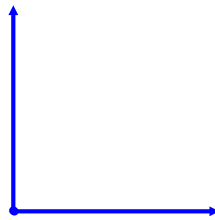Section 1.6 Linear Business Applications

Objectives:
- Set up and solve Profit/Revenue/Cost application problems.
- Set up and solve Supply/Demand problems.

There are two main types of linear business applications.

Profit/Revenue/Cost

Supply/Demand

Ex 1: Market research has shown for a sporting event, supply for tickets is $200p - q = 100$ and demand is $4p = 6528 - 5q$.

   a) How many tickets will be purchased if the price is $30? $10?

   b) How many tickets will the sponsors of the event be willing to sell if the ticket price is $30? $10?

   c) What is the equilibrium point for this market?

Ex 2: Fixed costs are $92,880 to publish a certain cookbook and variable costs are $2.10 per book. The books sell for $15 each.

   a) How many books must be sold to break even?

   b) What is marginal revenue? (MR)

   c) What is marginal profit? (MP)

Ex 3: Find the market equilibrium point for these demand and supply curves.

   demand: $p = -4q + 300$

   supply: $p = 21q + 50$

Ex 4: A distributor will supply 10,000 calendars if the price is $2.00 each, or will supply 8,000 calendars if the price is $1.25. What is the supply equation?