

International Institute for  
Technology and Management



Unit 05a:Mathematics 1      **Tutoring Sheet #3**  
**Basics III – Graphing**

1. Sketch the graph of each equation :
  - a.  $5x - 3y = 15$
  - b.  $2x + 7y - 21 = 0$
  - c.  $y - 2x = 0$
  - d.  $p = 6q + 3$  and  $p = 19 - 2q$  on same diagram.

2. The functions  $f(x)$  and  $g(x)$  are given by :

$$f(x) = 4x^2 - 8x - 1, \quad g(x) = -4x^2 - 2x - 1$$

Sketch the graphs of  $y = f(x)$  and  $y = g(x)$  for  $x > 0$  on the same diagram, and determine the positive value of  $x$  at which these two graphs intersect.

3. The supply equation for a good is  $q = p^2 + 7p - 2$  and the demand equation is  $q = -p^2 - p + 40$  where  $p$  is the price. Sketch the supply and the demand functions for  $p \geq 0$ . Determine the equilibrium price and quantity.
4. Sketch the curves with equations  $y = 2x^2 + 3x - 5$  and  $y = 6x + 4 - 4x^2$  on the same diagram, indicating where each curve crosses each of the axes. Determine the value of  $x$  for which the two curves intersect.
5. The supply equation for a good is  $q = 4p - 2$  and the demand equation is  $q = -2p^2 - 6p + 98$  where  $p$  is the price. Sketch the supply and the demand functions for  $p \geq 0$ . Determine the equilibrium price and quantity.