Homework Questions 4 – Sketching Curves to Find Intersections
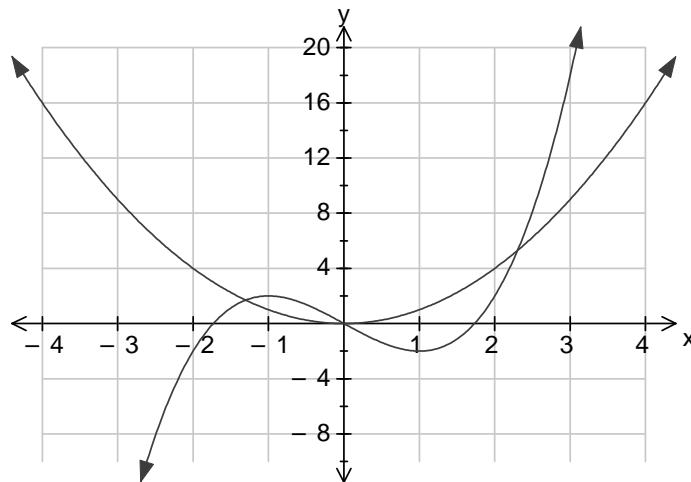
a) Plot the following pairs of graphs on the axis below
b) State the number of points of intersection
c) Write down a suitable equation which would give the x coordinates of the point of Intersection
d) Find the x coordinates of the points of intersection

a) $y = x^2$ $y = x(x^2 - 3)$

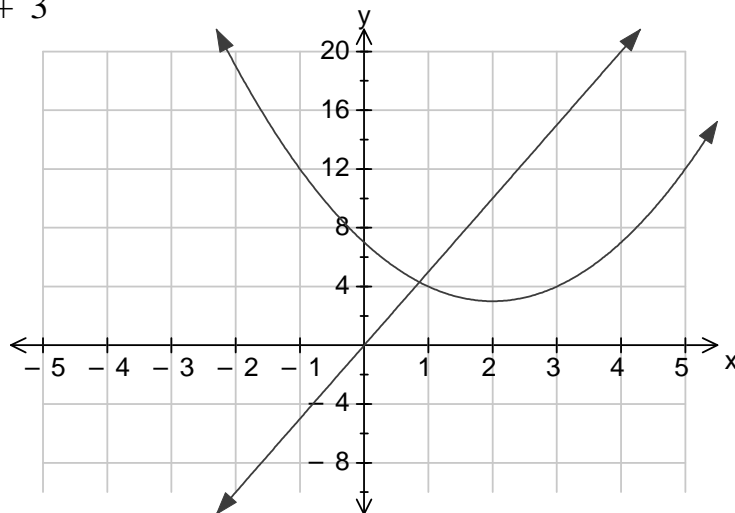3 points of intersections

$0 = x^3 - x^2 - 3x$

X=0, -1.30, 2.3

b) $y = 5x$ $y = (x - 2)^2 + 3$

1 point of intersection

$x^2 + x + 7 = 0$

X= 8.14, 0.86

c) $y = \dfrac{4}{x}$ $y = x - 3$

2 points of intersection

$0 = x^2 - 3x - 4$

X= -1, 4