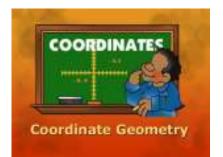
## Simple Co-ordinate geometry problems

- 1. Find the equation of straight line passing through the point P(5,2) with equal intercepts.
- 2. Consider a circle with center (4,5) and with radius of 8 If the tangent lines of the circle has slope  $\frac{1}{3}$ .

Find :

- (a) the points of contact of these tangent lines and the circle,
- (b) the equation of the tangent lines.



- 3. Find the value(s) of m such that  $(2m^3 + m^2 m)x^2 + (m^3 m^2 + 2m)y^2 8m + 18 = 0$ represents the equation of a circle.
- 4. Find the equation of a circle  $C_1$  passing through the intersection points of

 $\begin{cases} L: x - 3y + 4 = 0\\ C: x^2 + y^2 + 2x - 6y + 2 = 0 \end{cases}$ 

and with the smallest area.