# Co-ordinate Geometry Check List.

The C1 Module requires that you KNOW:

The Gradient of a line passing through $(x_1 , y_1)$ and $(x_2 , y_2)$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

Equation of a straight line in different forms

- $y-y_1 = m(x-x_1)$

Where m is the gradient and $(x_1 , y_1)$ is a point on the line

- $ax + by + c = 0$
- familiarity with $y=mx + c$ is assumed.

The conditions for two straight lines to be ***parallel*** or ***perpendicular*** to each other.

- ***Parallel lines*** have ***equal gradients***.
- If the ***product (multiplication) of the gradients of two lines is –1*** then the two lines are ***perpendicular (at right angles)***.

Co-ordinates of the ***mid-point*** of a line. $\frac{x_1 + x_2}{2} , \frac{y_1 + y_2}{2}$

The ***length of a line*** joining $(x_1 , y_1)$ and $(x_2 , y_2)$
(by Pythagoras' Theorem)

$$l = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

**To find a point of INTERSECTION (crossing point)**
We will solve simultaneous equations

Sometimes other stuff comes into a question! Like:
Solving problems involving simple geometry (such as areas of right angle triangles, trapezium, kites and rectangles and knowing the basic properties of shapes. Check up on basic GCSE area formula!!!!