Coordinate Geometry Revision

1. Given the points A(2,3) and B(8,11)

Determine the following

i) The length of the line segment [AB]
ii) The coordinate of the midpoint of [AB]
iii) The slope of [AB]
iv) The equation of [AB]
v) The equation of a line which is parallel to [AB]
vi) The equation of a line which is perpendicular to [AB]

2. Given the line $l_1: 2x + y = 8$ and $l_2: x - 2y = -1$

Determine the coordinate of the intercepts of $l_1$and l_2 and draw the lines on a set of coordinate axes.

Identify the point of intersection and verify algebraically (Simultaneous equations)

3. Plot the points P(2,2), Q(8,10) and R(0,4). Verify that the triangle PQR is right angled and isosceles.

4. Plot the point A(2,1) B(-2,3) C(1,-2)

i) Find the midpoint of [AB]
ii) Find the slope of [AB]
iii) Find the equation of a line, l_3 which is perpendicular to [AB]and contains its midpoint.

iv) Find the midpoint of [AC]
v) Find the slope of [AC]
vi) Find the equation of a line, l_4 which is perpendicular to [AC]and contains its midpoint
vii) Find the point of intersection of l_3 and l_4