1   The point P has coordinates $(3, 4)$
The point Q has coordinates (a, b)

A line perpendicular to PQ is given by the equation $3x + 2y = 7$

Find an expression for b in terms of a.

(Total for Question   is 5 marks)

2 The straight line **L** has the equation $3y = 4x + 7$
The point A has coordinates $(3, -5)$

Find an equation of the straight line that is perpendicular to **L** and passes through A.

(Total for Question   is 3 marks)

3   The straight line **L** has equation $3x + 2y = 17$

The point A has coordinates $(0, 2)$
The straight line **M** is perpendicular to **L** and passes through A.

Line **L** crosses the y-axis at the point B.
Lines **L** and **M** intersect at the point C.
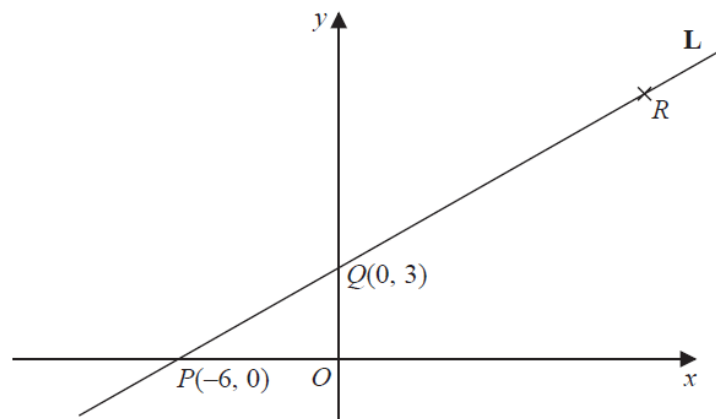
Work out the area of triangle ABC.
You must show all your working.

(Total for Question   is 5 marks)

4 The straight line L_1 has equation $y = 3x - 4$
The straight line L_2 is perpendicular to L_1 and passes through the point $(9, 5)$

Find an equation of line L_2

....

(Total for Question   is 3 marks)

5   Here is a sketch of the line **L**.

The points $P(-6, 0)$ and $Q(0, 3)$ are points on the line **L**.

The point R is such that PQR is a straight line and $PQ:QR = 2:3$

(a) Find the coordinates of R.

(......................... , ...)

(2)

(b) Find an equation of the line that is perpendicular to **L** and passes through Q.

(3)

(Total for Question   is 5 marks)