8 The points A and B have coordinates $(-6, 8)$ and $(12, 2)$ respectively.

(a) Find an equation of the straight line passing through A and B in the form $ax + by + c = 0$, where a, b and c are integers to be found.

(3)

(b) Find the exact length of AB

(2)

The point X with coordinates (m, n) lies on AB such that $AX : XB = 1 : 2$

(c) Find the value of m and the value of n

(2)

The line L passes through the point X and is perpendicular to AB
The point C with coordinates (p, q) lies on L where $p > 0$ and $q > 0$

Given that AB is a diameter of a circle and C also lies on the circumference of the circle,

(d) find

(i) the exact value of p

(ii) the exact value of q

(7)

(e) Find the exact area of triangle ABC

(3)

Question 8 continued

Question 8 continued

Question 8 continued

(Total for Question 8 is 17 marks)