Formal Exercise 4 - Polynomials

1. (a) Show that is a factor of: .

(b) Hence factorise fully. (4)

2. (a) Given is a factor of ,

find the value of *k*. (3)

(b) Hence solve the equation: ,

when *k* takes this value. (2)

3. (a)

Given and are both factors of find and .

(5)

(b) Hence solve when and take these values.

(2)



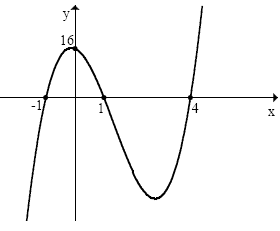
The tangent to the curve:

at the point has equation:

Find the coordinates of the other point of intersection of the curve and this tangent.

4.

(6)



The function opposite has roots of:

and and it crosses the y-axis at the point (0,16).

Find the equation of this function.

5.

(4)

6. A quadrilateral has vertices and as shown in the diagram below.

(a) Find the equation of diagonal BD.

(2)

(b) The equation of diagonal AC is .

Find the coordinates of E, the point of intersection of the diagonals.

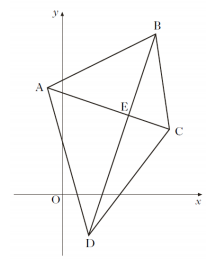
(2)

(c) (i) Find the equation of the perpendicular bisector of AB.

(3)

(ii) Show that this line passes through E.

(1)



(=34 marks)