10 $$f(x) = 3x^3 - 7x^2 + 5x - 1$$

(a) Use the factor theorem to show that $(3x - 1)$ is a factor of f(x).

(2)

(b) Hence solve the equation f(x) = 0
Show clear algebraic working.

(3)

The curve C has equation $y = $ f(x)

(c) Find the exact coordinates of the turning points on C.

(5)

The curve C crosses the y-axis at the point P.

(d) (i) Find the gradient of C at P.

(1)

(ii) Hence find an equation of the tangent to C at P.

(2)

Question 10 continued

Question 10 continued

P 6 2 0 1 9 A 0 2 8 3 6

Question 10 continued

(Total for Question 10 is 13 marks)

P 6 2 0 1 9 A 0 2 9 3 6