

8 A curve has equation

$$y = x^3 - 6x + \frac{9}{x}$$

8 (a) Show that the x coordinates of the stationary points of the curve satisfy the equation

$$x^4 - 2x^2 - 3 = 0$$

[3 marks]

8 (b) Deduce that the curve has exactly two stationary points.

[3 marks]

8 (c) Find the coordinates and nature of the two stationary points.

Fully justify your answer.

[4 marks]

8 (d) Write down the equation of a line which is a tangent to the curve in two places.

[1 mark]