

4 $p(x) = 4x^3 - 15x^2 - 48x - 36$

4 (a) Use the factor theorem to prove that $x - 6$ is a factor of $p(x)$.

[2 marks]

4 (b) (i) Prove that the graph of $y = p(x)$ intersects the x -axis at exactly one point.

[4 marks]

4 (b) (ii) State the coordinates of this point of intersection.

[1 mark]