5 **In this question you must show detailed reasoning.**

This question is about the curve $y = x^3 - 5x^2 + 6x$.

(a) Find the equation of the tangent, T, to the curve at the point $(0, 0)$. [3]

(b) Find the equation of the normal, N, to the curve at the point $(1, 2)$. [3]

(c) Find the coordinates of the point of intersection of T and N. [2]