

9 The curve $y = (x - 1)^2$ maps onto the curve C_1 following a stretch scale factor $\frac{1}{2}$ in the x -direction.

(i) Show that the equation of C_1 can be written as $y = 4x^2 - 4x + 1$. [2]

The curve C_2 is a translation of $y = 4.25x - x^2$ by $\begin{pmatrix} 0 \\ -3 \end{pmatrix}$.

(ii) Show that the normal to the curve C_1 at the point $(0, 1)$ is a tangent to the curve C_2 . [7]