3 The diagram in the Printed Answer Booklet shows part of the graph of $y = x^2 - 4x + 3$.

(a) It is required to solve the equation $x^2 - 3x + 1 = 0$ graphically by drawing a straight line with equation $y = mx + c$ on the diagram, where m and c are constants.

Find the values of m and c. **[2]**

(b) Use the graph to find approximate values of the roots of the equation $x^2 - 3x + 1 = 0$. **[2]**

(c) By shading, or otherwise, indicate clearly the regions where **all** of the following inequalities are satisfied. You should use the values of m and c found in part **(a)**.

$x \geqslant 0$ $\quad x \leqslant 4$ $\quad y \leqslant x^2 - 4x + 3$ $\quad y \geqslant mx + c$ **[3]**

3(a)
3(b)
3(c)