

6 The cubic polynomial $f(x)$ is defined by $f(x) = 2x^3 - 7x^2 + 2x + 3$.

- (i) Given that $(x - 3)$ is a factor of $f(x)$, express $f(x)$ in a fully factorised form. [3]
- (ii) Sketch the graph of $y = f(x)$, indicating the coordinates of any points of intersection with the axes. [2]
- (iii) Solve the inequality $f(x) < 0$, giving your answer in set notation. [2]
- (iv) The graph of $y = f(x)$ is transformed by a stretch parallel to the x -axis, scale factor $\frac{1}{2}$.
Find the equation of the transformed graph. [2]