5 **(a)** Write $2x^2 - 2x + 3$ in the form $a(x+b)^2 + c$, where a, b and c are constants. [3]

It is given that $\mathrm{f}(x) = 2x^2 - 2x + 3$, for $x \leqslant p$.

(b) Write down the greatest value of p for which f has an inverse. [1]

(c) Using this value of p, write down the range of f. [1]

(d) Using this value of p, find an expression for f^{-1}. [3]

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6 It is given that $\tan\theta = \frac{\sqrt{5}}{5}$ and $180° < \theta < 360°$.

(a) Find the value of $\cos\theta$. [2]

(b) Find the value of $\sin\theta$. [1]

(c) Find the value of $\sec\theta + \cot\theta$.

Give your answer in the form $\frac{a + b\sqrt{c}}{\sqrt{5}}$, where a, b and c are integers. [2]