4 **(i)** Express $4x^2 - 12x + 11$ in the form $a(x+b)^2 + c$. **[3]**

(ii) State the number of real roots of the equation $4x^2 - 12x + 11 = 0$. **[1]**

(iii) Explain fully how the value of r is related to the number of real roots of the equation $p(x+q)^2 + r = 0$ where p, q and r are real constants and $p > 0$. **[2]**