The functions f and g are defined on $\mathbb{R}$, the set of real numbers by

$f(x) = 2x^2 - 4x + 5$ and $g(x) = 3 - x$.

(a) Given $h(x) = f(g(x))$, show that $h(x) = 2x^2 - 8x + 11$.   **2**

(b) Express $h(x)$ in the form $p(x+q)^2 + r$.   **3**

Answers:

(a)   Proof. See marking instructions.

(b) $2(x-2)^2 + 3$