2 The one-one function f is defined by $f(x) = (x-4)^2 + 2$ for $x < 4$.

(a) (i) State the range of f. **[1]**

(ii) Find an expression for $f^{-1}(x)$. **[2]**

(iii) State the range of f^{-1}. **[1]**

(iv) State how the graphs of $y = f(x)$ and $y = f^{-1}(x)$ are related geometrically. **[1]**

(b) Describe a sequence of **two** transformations which transforms the curve $y = f(x)$ to the curve $y = (3x-4)^2 + 6$. **[3]**