

11 The equation of a curve is $y = 8x - x^2$.

(i) Express $8x - x^2$ in the form $a - (x + b)^2$, stating the numerical values of a and b . [3]

(ii) Hence, or otherwise, find the coordinates of the stationary point of the curve. [2]

(iii) Find the set of values of x for which $y \geq -20$. [3]

The function g is defined by $g : x \mapsto 8x - x^2$, for $x \geq 4$.

(iv) State the domain and range of g^{-1} . [2]

(v) Find an expression, in terms of x , for $g^{-1}(x)$. [3]