



- (i) The diagram shows part of the curve $y = 11 - x^2$ and part of the straight line $y = 5 - x$ meeting at the point $A (p, q)$, where p and q are positive constants. Find the values of p and q . [3]
- (ii) The function f is defined for the domain $x \geq 0$ by

$$f(x) = \begin{cases} 11 - x^2 & \text{for } 0 \leq x \leq p, \\ 5 - x & \text{for } x > p. \end{cases}$$

Express $f^{-1}(x)$ in a similar way.

[5]