

6 The function f is defined by

$$f(x) = \frac{1}{2}(x^2 + 1), x \geq 0$$

6 (a) Find the range of f .

[1 mark]

6 (b) (i) Find $f^{-1}(x)$

[3 marks]

6 (b) (ii) State the range of $f^{-1}(x)$

[1 mark]

6 (c) State the transformation which maps the graph of $y = f(x)$ onto the graph of $y = f^{-1}(x)$

[1 mark]

6 (d) Find the coordinates of the point of intersection of the graphs of $y = f(x)$ and $y = f^{-1}(x)$

[2 marks]