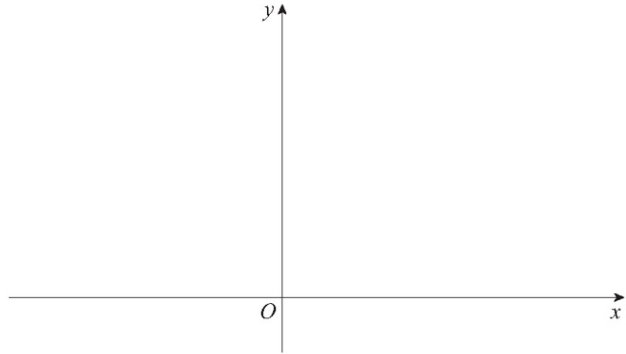
7 (a) Sketch the graph of $y = 2^{-x}$

[2 marks]



7 (b) The function f is defined by

$$\mathrm{f}(x) = 5 - 2^{-x} \text{ for all real values of } x$$

7 (b) (i) Use calculus to show that f is an increasing function.

[3 marks]

7 (b) (ii) State the range of f

[1 mark]

7 (b) (iii) The inverse of f is f^{-1}

Find an expression for $\mathrm{f}^{-1}(x)$

[3 marks]

7 (b) (iv) State the domain of f^{-1}

[1 mark]