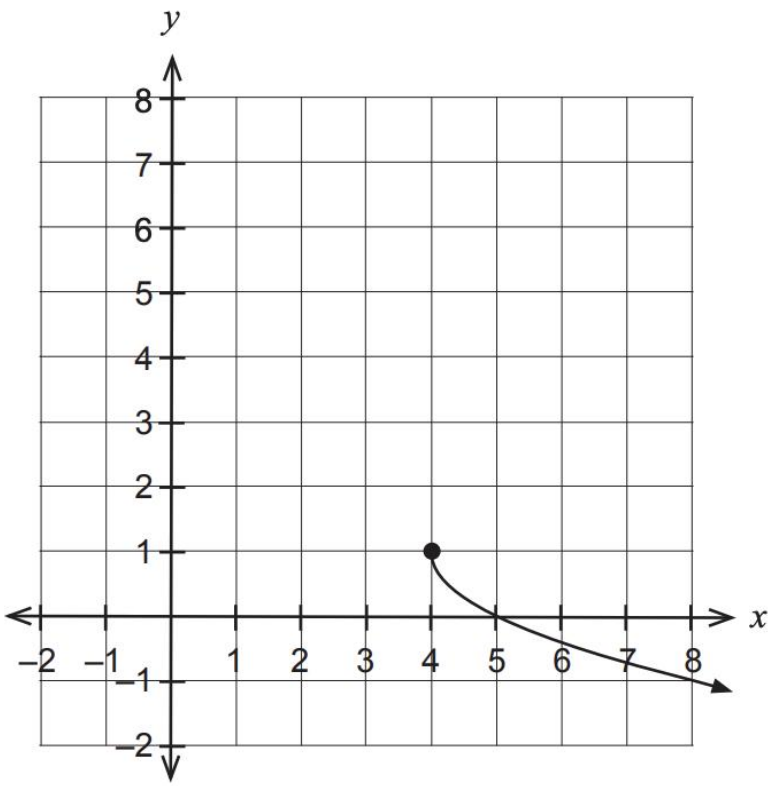
Question 4 **(9 marks)**

Function f is defined as $f(x) = 1 - \sqrt{x-4}$. The graph of $y = f(x)$ is shown below.



(a) Sketch the graph of $y = f^{-1}(x)$ on the axes above. (2 marks)

(b) Determine the defining rule for $y = f^{-1}(x)$ and state its domain. (3 marks)

Function g is defined as $g(x) = \frac{1}{x^2}$.

(c) Determine an expression for $f \circ g(x)$. (1 mark)

(d) For $f \circ g(x)$, determine the domain. (3 marks)