

2D Inverse Functions

1. Find the inverse of the function:

$$f(x) = \frac{3}{x-1}, \{x \in \mathbb{R}, x \neq 1\}$$

2. The function:

$$f(x) = \sqrt{x-2}, \quad x \in \mathbb{R}, \quad x \geq 2$$

a) State the range of $f(x)$

b) Find the function $f^{-1}(x)$ and state its domain and range

c) Sketch $y = f(x)$ and $y = f^{-1}(x)$ and the line $y = x$

3. The function $f(x)$ is defined by:

$$f(x) = x^2 - 3, x \in \mathbb{R}, x \geq 0.$$

a) Find $f^{-1}(x)$

b) Sketch $y = f^{-1}(x)$ and state its domain

c) Solve the equation $f(x) = f^{-1}(x)$