Piecewise Functions

Examples

1. The function $f(x)$ is defined by

$$f:x \rightarrow \begin{cases} 5 - 2x, & x < 1 \\ x^2 + 3, & x \geq 1 \end{cases}$$

a) Sketch $y = f(x)$, and state the range of $f(x)$.

b) Solve $f(x) = 19$

2.

The function s is defined by

$$s(x) = \begin{cases} x^2 - 6, & x < 0 \\ 10 - x, & x \geq 0 \end{cases}$$

a Sketch $y = s(x)$.

b Find the value(s) of a such that $s(a) = 43$.

c Solve $s(x) = x$.

Test Your Understanding

1. The function f is defined by

$$f: x \rightarrow e^x + 2, \quad x \in \mathbb{R}$$

State the range of f.

2. The function g is defined by

$$g: x \rightarrow x^2 - 4x + 1, \quad x \in \mathbb{R}, \ 0 \leq x \leq 5$$

Find the range of g.

Ex 2B Pg 30