Increasing-Decreasing - 2025

Question 1: 2025 - Set 1 - Q22 - 2 M -

Increasing–Decreasing

Q : Find the values of a for which f(x) =

$x^2 - 2ax + b$ is an increasing function for $x > 0$.

Question 2: 2025 - Set 2 - Q10 - 1 M -

Increasing–Decreasing

Q : The function $f(x) = x^2 - 4x + 6$ is increasing in the interval

(A) (0, 2) (B) $(-\infty, 2]$

(C) [1, 2] (D) $[2, \infty)$

Question 3: 2025 - Set 2 - Q21 - 2 M -

Increasing–Decreasing

Q : Find the values of a for which f(x) = sin x −

ax + b is increasing on $\mathbb{R}$.

Question 4: 2025 - Set 3 - Q11 - 1 M -

Increasing–Decreasing

Q : If $f : \mathbb{R} \to \mathbb{R}$ is defined as $f(x) = 2x - \sin x$, then f is:

(A) a decreasing function

(B) an increasing function

(C) maximum at $x = \pi/2$

(D) maximum at x = 0

Question 5: 2025 - Set 3 - Q26(a) - 3 M -

Increasing–Decreasing

Q : Show that the function $f : \mathbb{R} \to \mathbb{R}$ defined by

$f(x) = 4x^3 - 5$, for all $x \in \mathbb{R}$, is one-one and onto.

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