

JEE MAIN INVERSE TRIGONOMETRIC FUNCTIONS — BASIC CONCEPTS: DOMAIN, RANGE AND PRINCIPAL VALUES — PYQS

Max. Marks: 16
Questions: 4

Section A (MCQ) — 4 questions

Q.1 Let $[\cdot]$ denote the greatest integer function. If the domain of the function $f(x) = \cos^{-1}\left(\frac{4x + 2[x]}{3}\right)$ is $[\alpha, \beta]$, then $12(\alpha + \beta)$ is equal to :

[JEE Main 2026 (Online) 4th April Morning Shift]

- (1) 6 (2) 8 (3) 9 (4) 4

Scan or tap for the full solution



Q.2 If the domain of the function $f(x) = \sin^{-1}\left(\frac{1}{x^2 - 2x - 2}\right)$ is $(-\infty, \alpha] \cup [\beta, \gamma] \cup [\delta, \infty)$, then $\alpha + \beta + \gamma + \delta$ is equal to

[JEE Main 2026 (Online) 24th January Evening Shift]

- (1) 4 (2) 2 (3) 5 (4) 3

Scan or tap for the full solution



Q.3 If the domain of the function $f(x) = \cos^{-1}\left(\frac{2x-5}{11-3x}\right) + \sin^{-1}(2x^2 - 3x + 1)$ is the interval $[\alpha, \beta]$, then $\alpha + 2\beta$ is equal to :

[JEE Main 2026 (Online) 21st January Morning Shift]

- (1) 5 (2) 2 (3) 3 (4) 1

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Q.4 Let $[x]$ denote the greatest integer less than or equal to x . Then the domain of $f(x) = \sec^{-1}(2[x] + 1)$ is:

[JEE Main 2025 (Online) 28th January Evening Shift]

- (1) $(-\infty, \infty)$ (2) $(-\infty, \infty) - \{0\}$
 (3) $(-\infty, -1] \cup [0, \infty)$ (4) $(-\infty, -1] \cup [1, \infty)$

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4										
Ans.	1	1	3	1										