

JEE MAIN TRIGONOMETRIC FUNCTIONS — TRANSFORMATION FORMULAE (PRODUCT ↔ SUM) — PYQS

Max. Marks: 12
Questions: 3

Section A (MCQ) — 2 questions

Q.1 If $\sin\left(\frac{\pi}{18}\right)\sin\left(\frac{5\pi}{18}\right)\sin\left(\frac{7\pi}{18}\right) = K$, then the value of $\sin\left(\frac{10K\pi}{3}\right)$ is :

[JEE Main 2026 (Online) 2nd April Morning Shift]

- (1) $\frac{\sqrt{3}+1}{2\sqrt{2}}$ (2) $\frac{\sqrt{3}-1}{\sqrt{2}}$
 (3) $\frac{\sqrt{3}}{2}$ (4) $\frac{1}{2}$

Scan or tap for the
full solution



Q.2 The value of $\frac{\sqrt{3}\operatorname{cosec} 20^\circ - \sec 20^\circ}{\cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ}$ is equal to

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

- (1) 32 (2) 64 (3) 12 (4) 16

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Section B (Numerical) — 1 question

Q.3 If $\frac{\cos^2 48^\circ - \sin^2 12^\circ}{\sin^2 24^\circ - \sin^2 6^\circ} = \frac{\alpha + \beta\sqrt{5}}{2}$, where $\alpha, \beta \in \mathbb{N}$, then $\alpha + \beta$ is equal to _____

[JEE Main 2026 (Online) 22nd January Morning Shift]

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ANSWER KEY

Section A (MCQ) — 2 questions

Ques.	1	2									
Ans.	1	2									

Section B (Numerical) — 1 question

Ques.	3										
Ans.	4										