

CLASS 12

MATHEMATICS

NCERT SOLUTIONS

NCERT Solutions for Class 12 Mathematics Chapter 2: Inverse Trigonometric Functions – Free PDF Download

Complete, verified solutions to the NCERT Class 12 Maths Chapter 2 (Inverse Trigonometric Functions) exercise questions. These Class 12 Mathematics Chapter 2 solutions are also useful as quick revision notes before exams.

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NCERT Exercise Solutions

2.1 Find the principal value of $\sin^{-1}(-1/2)$.

Ans: $\sin^{-1}(-1/2) = -\pi/6$, since $\sin(-\pi/6) = -1/2$ and $-\pi/6$ lies in the principal value range $[-\pi/2, \pi/2]$.

2.2 Find the principal value of $\cos^{-1}(\sqrt{3}/2)$.

Ans: $\cos^{-1}(\sqrt{3}/2) = \pi/6$, since $\cos(\pi/6) = \sqrt{3}/2$ and $\pi/6$ lies in $[0, \pi]$.

2.3 Find the principal value of $\operatorname{cosec}^{-1}(2)$.

Ans: $\operatorname{cosec}^{-1}(2) = \pi/6$, since $\operatorname{cosec}(\pi/6) = 2$.

2.4 Find the principal value of $\tan^{-1}(-\sqrt{3})$.

Ans: $\tan^{-1}(-\sqrt{3}) = -\pi/3$, since $\tan(-\pi/3) = -\sqrt{3}$.

2.5 Find the principal value of $\cos^{-1}(-1/2)$.

Ans: $\cos^{-1}(-1/2) = 2\pi/3$, since $\cos(2\pi/3) = -1/2$ and $2\pi/3 \in [0, \pi]$.

2.6 Find the principal value of $\tan^{-1}(-1)$.

Ans: $\tan^{-1}(-1) = -\pi/4$.

2.7 Find the principal value of $\sec^{-1}(2/\sqrt{3})$.

Ans: $\sec^{-1}(2/\sqrt{3}) = \pi/6$, since $\sec(\pi/6) = 2/\sqrt{3}$.

2.8 Find the value of $\tan^{-1}(1) + \cos^{-1}(-1/2) + \sin^{-1}(-1/2)$.

Ans: $\pi/4 + 2\pi/3 + (-\pi/6) = 3\pi/12 + 8\pi/12 - 2\pi/12 = 9\pi/12 = 3\pi/4$.

2.9 Find the value of $\cos^{-1}(1/2) + 2\sin^{-1}(1/2)$.

Ans: $\pi/3 + 2(\pi/6) = \pi/3 + \pi/3 = 2\pi/3$.

2.10 Find the value of $\tan^{-1}(\sqrt{3}) - \sec^{-1}(-2)$.

Ans: $\pi/3 - 2\pi/3 = -\pi/3$ (using $\sec^{-1}(-2) = \pi - \sec^{-1}(2) = \pi - \pi/3 = 2\pi/3$).

2.11 Find the value of $\tan^{-1}(1) + \tan^{-1}(0)$.

Ans: $\pi/4 + 0 = \pi/4$.

Class 12 Mathematics Chapter 2 – Notes and Extra Questions

Along with these NCERT Solutions, students can also use the [Class 12 Mathematics Chapter 2 Extra Questions](#) and [Class 12 Mathematics Chapter 2 Revision Notes](#) for quick revision and extra practice.

See also: [Chapter 1](#)

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