NDA 1 2025

LIVE

MATHS

TRIGONOMETRY

CLASS 5

NAVJYOTI SIR

Crack
EXAMS

15 Oct 2024 Live Classes Schedule

8:00AM	15 OCTOBER 2024 DAILY CURRENT AFFAIRS	RUBY MA'AM
9:00AM	15 OCTOBER 2024 DAILY DEFENCE UPDATES	DIVYANSHU SIR

SSB INTERVIEW LIVE CLASSES

9:30AM	OVERVIEW ON GROUP TASKS	ANURADHA MA'AM

NDA 1 2025 LIVE CLASSES

11:30AM	GK - POLITY - DPSP & FUNDAMENTAL DUTIES	RUBY MA'AM
1:00PM	BIOLOGY - MCQ - CLASS 6	SHIVANGI MA'AM
4:00PM	MATHS - TRIGONOMETRY - CLASS 5	NAVJYOTI SIR
5:30PM	ENGLISH - SYNONYMS - CLASS 3	ANURADHA MA'AM

CDS 1 2025 LIVE CLASSES

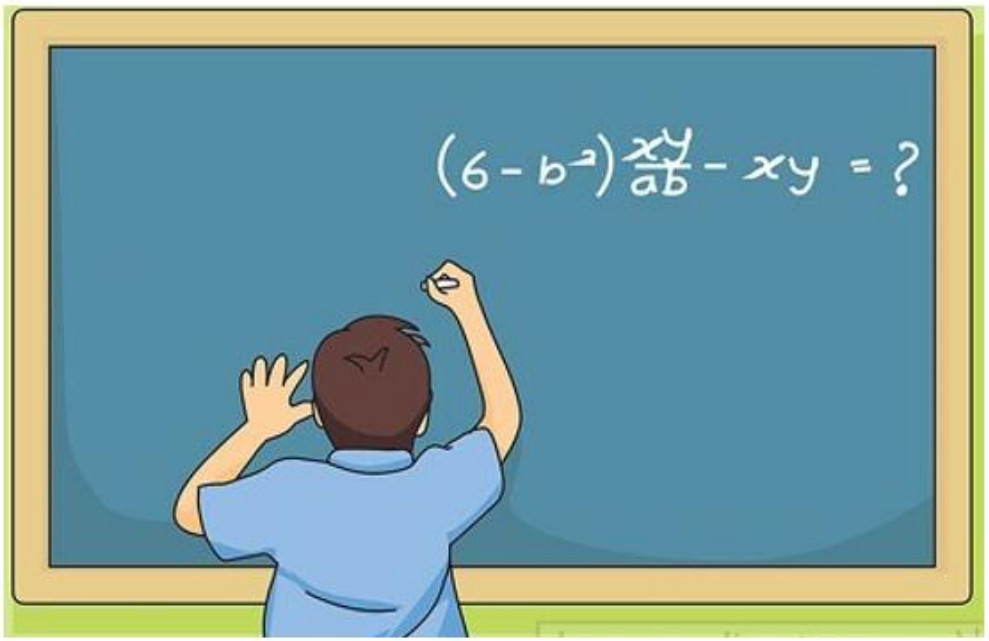
11:30AM	GK - POLITY - DPSP & FUNDAMENTAL DUTIES	RUBY MA'AM
1:00PM	BIOLOGY - MCQ - CLASS 6	SHIVANGI MA'AM
5:30PM	ENGLISH - SYNONYMS - CLASS 3	ANURADHA MA'AM
7:00PM	MATHS - RATIO & PROPORTION - CLASS 2	NAVJYOTI SIR

AFCAT 1 2025 LIVE CLASSES

4:00PM	STATIC GK - WORLD HERITAGE SITES IN INDIA	DIVYANSHU SIR
5:30PM	ENGLISH - SYNONYMS - CLASS 3	ANURADHA MA'AM
7:00PM	MATHS - RATIO & PROPORTION - CLASS 2	NAVJYOTI SIR

NDA 1 2025 LIVE CLASS - MATHS - PART 5

PRACTISE
TIME !



Q) If angles of a triangle are in the ratio $1:2:3$, then what is the ratio of its corresponding sides?

(a) $3:2:1$ (b) $1:\sqrt{2}:\sqrt{3}$

(c) $1:\sqrt{3}:2$ (d) $2:\sqrt{3}:4$

Angles $\longrightarrow$ $1:2:3$

$(x, 2x, 3x)$

$6x = 180^\circ$

$x = 30^\circ$

(A) (B) (C)

$(30^\circ, 60^\circ, 90^\circ)$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = k$$

$a = k\sin A = k\sin 30^\circ = \frac{k}{2}$

$b = k\sin B = \frac{\sqrt{3}}{2}k$

$c = k\sin C = k$

NDA 1 2025 LIVE CLASS - MATHS - PART 5

$$\frac{k}{2} : \frac{\sqrt{3}}{2}k : k$$

$$\frac{1}{2} : \frac{\sqrt{3}}{2} : 1$$

$$1 : \sqrt{3} : 2$$

Q) If angles of a triangle are in the ratio $1:2:3$, then what is the ratio of its corresponding sides?

(a) $3:2:1$

(b) $1:\sqrt{2}:\sqrt{3}$

(c) $1:\sqrt{3}:2$

(d) $2:\sqrt{3}:4$

Ans: (c)

Q) If the angles of a ΔABC be in AP, then

(a) $c^2 = a^2 + b^2 - ab$

(b) $b^2 = a^2 + c^2 - ac$ ✓

(c) $a^2 = b^2 + c^2 - ac$

(d) $b^2 = a^2 + c^2$

A, B, C are in AP

$2B = A + C \Rightarrow$

$A + B + C = 180^\circ$

$2B + B = 180^\circ$

$B = 60^\circ$

$\cos B = \dfrac{a^2 + c^2 - b^2}{2ac}$

$a^2 + c^2 - ac = b^2$

$\dfrac{1}{2} = \dfrac{a^2 + c^2 - b^2}{2ac}$

$ac = a^2 + c^2 - b^2$

Q) If the angles of a ΔABC be in AP, then

(a) $c^2 = a^2 + b^2 - ab$

(b) $b^2 = a^2 + c^2 - ac$

(c) $a^2 = b^2 + c^2 - ac$

(d) $b^2 = a^2 + c^2$

Ans: (b)

(PYQ – 2024 – II)

In a triangle ABC

$$\frac{a}{\cos A} = \frac{b}{\cos B} = \frac{c}{\cos C}$$

What is the area of the triangle if $a = 6$ cm?

(a) $9\sqrt{3}$ square cm

(b) 12 square cm

(c) $18\sqrt{3}$ square cm

(d) 24 square cm

By sine formula,

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = k$$

$a = k\sin A$; $b = k\sin B$; $c = k\sin C$

$k\tan A = k\tan B = k\tan C$

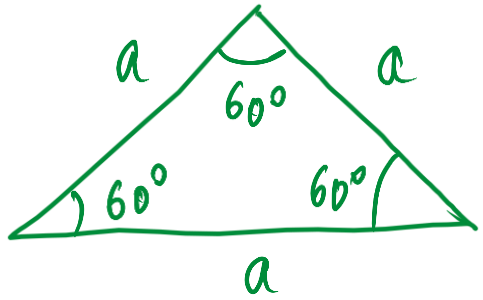
$\tan A = \tan B = \tan C$

$\Rightarrow A = B = C \Rightarrow$ Each angle is $60^\circ \Rightarrow$ Triangle is equilateral.

$$\text{Area} = \frac{\sqrt{3}}{4}a^2$$

$$= \frac{\sqrt{3}}{4}(6)^2$$

$$= 9\sqrt{3}\ \text{cm}^2$$



NDA 1 2025 LIVE CLASS - MATHS - PART 5

In a triangle ABC

$$\frac{a}{\cos A} = \frac{b}{\cos B} = \frac{c}{\cos C}$$

What is the area of the triangle if $a = 6$ cm?

(a) $9\sqrt{3}$ square cm

(b) 12 square cm

(c) $18\sqrt{3}$ square cm

(d) 24 square cm

Ans: (a)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

In a triangle ABC, $\angle A = 75°$ and $\angle B = 45°$.
What is $2a - b$ equal to?

(PYQ – 2024 – II)

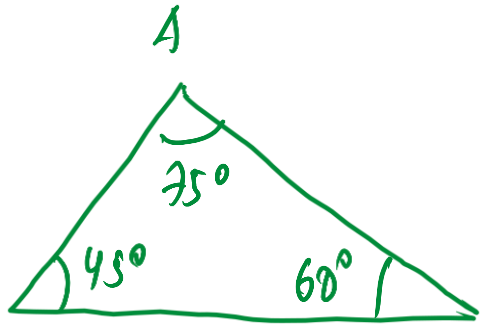
(a) c

(b) $\sqrt{2}\,c$

(c) $2c$

(d) $2\sqrt{2}\,c$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = k$$



$$\frac{a}{\sin A} = \frac{c}{\sin C}$$

$$a = \left(\frac{\sin 75°}{\sin 60°}\right) c = \left(\frac{\frac{\sqrt{3}+1}{2\sqrt{2}}}{\frac{\sqrt{3}}{2}}\right) c = \left(\frac{\sqrt{3}+1}{\sqrt{6}}\right) c$$

$$\frac{b}{\sin B} = \frac{c}{\sin C}$$

$$b = \left(\frac{\sin 45^\circ}{\sin 60^\circ}\right) c = \left(\frac{\frac{1}{\sqrt{2}}}{\frac{\sqrt{3}}{2}}\right) c = \left(\frac{\sqrt{2}}{\sqrt{3}}\right) c$$

$$2a - b = 2\left(\frac{\sqrt{3}+1}{\sqrt{6}}\right) c - \left(\frac{\sqrt{2}}{\sqrt{3}}\right) c$$

$$= \left(\frac{\sqrt{6} + \sqrt{2} - \sqrt{2}}{\sqrt{3}}\right) c = \underline{\sqrt{2}c}$$

NDA 1 2025 LIVE CLASS - MATHS - PART 5

In a triangle ABC, $\angle A = 75°$ and $\angle B = 45°$.
What is $2a - b$ equal to?

(a) c

(b) $\sqrt{2}\,c$

(c) $2c$

(d) $2\sqrt{2}\,c$

Ans: (b)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

What is the general solution of $\cos^{100} x - \sin^{100} x = 1$? **(PYQ – 2024 – II)**

(a) $n\pi$ ✓

(b) $(2n+1)\pi$

(c) $2n\pi$

(d) $(2n+1)\pi/2$

where n is an integer.

$\cos x = 1$, $\sin x = 0$ } $x = 2n\pi$ → even multiple of π

$(1)^{100} - (0)^{100} = 1 - 0 = 1$ ✓

odd multiple of π

$x = (2n+1)\pi$ { $\cos x = -1$, $\sin x = 0$

$(-1)^{100} - (0)^{100} = 1 - 0 = 1$ ✓

Combining the soln. ⟶ all multiples of π

NDA 1 2025 LIVE CLASS - MATHS - PART 5

What is the general solution of $\cos^{100} x - \sin^{100} x = 1$?

(a) $n\pi$

(b) $(2n+1)\pi$

(c) $2n\pi$

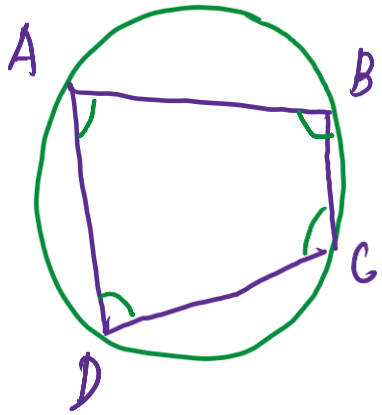
(d) $(2n+1)\pi/2$

where n is an integer.

Ans: (a)

Q) If $ABCD$ is a cyclic quadrilateral, then what is the value of $\sin A + \sin B - \sin C - \sin D$?

(a) 0 ✓
(b) 1
(c) 2
(d) $2(\sin A + \sin B)$



$A + C = 180°$

$B + D = 180°$

(opp. angles are supplementary)

$\sin A - \sin C + \sin B - \sin D$

$\sin A - \sin(180° - A) + \sin B - \sin(180° - B)$

$\sin A - \sin A + \sin B - \sin B$

$= 0$

Q) If $ABCD$ is a cyclic quadrilateral, then what is the value of $\sin A + \sin B - \sin C - \sin D$?

(a) 0
(b) 1
(c) 2
(d) $2(\sin A + \sin B)$

Ans: (a)

SSBCrack EXAMS

Q) In a ΔABC, $a = 8$, $b = 10$ and $c = 12$. What is $\angle C$ equal to?

(a) $A/2$ (b) $2A$ (c) $3A$ (d) $3A/2$

$$\cos C = \frac{a^2+b^2-c^2}{2ab}$$

$$= \frac{8^2+10^2-12^2}{2\times 8\times 10}$$

$$= \frac{20}{16\times 10} = \frac{1}{8}$$

$$\cos A = \frac{b^2+c^2-a^2}{2bc}$$

$$= \frac{10^2+12^2-8^2}{2\times 10\times 12} = \frac{244-64}{2\times 10\times 12} = \frac{180}{240}$$

$\cos C = \frac{1}{8}$

$C = \cos^{-1}\left(\frac{1}{8}\right)$

$\cos A = \frac{3}{4}$

$A = \cos^{-1}\left(\frac{3}{4}\right)$

(a) $\frac{A}{2}$ =

(b) $2A = 2\cos^{-1}\left(\frac{3}{4}\right) = \cos^{-1}\left(2\left(\frac{3}{4}\right)^2 - 1\right) = \cos^{-1}\left(\frac{9}{8} - 1\right) = \cos^{-1}\left(\frac{1}{8}\right)$

(c) $3A$

(d) $\frac{3A}{2}$

$\left(2\cos^{-1}x = \cos^{-1}\left(2x^2 - 1\right)\right)$

Q) In a ΔABC, $a = 8$, $b = 10$ and $c = 12$. What is $\angle C$ equal to?

(a) $A/2$ (b) $2A$ (c) $3A$ (d) $3A/2$

Ans: (b)

Q) If $\sin(\pi \cos x) = \cos(\pi \sin x)$, then what is one of the values of $\sin 2x$?

(a) $-\frac{1}{4}$ (b) $-\frac{1}{2}$

(c) $-\frac{3}{4}$ (d) -1

$$\sin(\pi\cos x) = \sin\left(\frac{\pi}{2} - \pi\sin x\right)$$

$$\pi\cos x = \frac{\pi}{2} - \pi\sin x$$

$$\cos x = \frac{1}{2} - \sin x$$

$$\cos x + \sin x = \frac{1}{2}$$

squaring,

$$1 + 2\sin x\cos x = \frac{1}{4}$$

$$\sin 2x = \frac{1}{4} - 1$$

$$\left\{\sin 2x = -\frac{3}{4}\right\}$$

Q) If $\sin(\pi \cos x) = \cos(\pi \sin x)$, then what is one of the values of $\sin 2x$?

(a) $-\frac{1}{4}$ (b) $-\frac{1}{2}$

(c) $-\frac{3}{4}$ (d) -1

Ans: (c)

Q) Let $f(\theta) = \sin\theta(\sin\theta + \sin 3\theta)$. Then $f(\theta)$ is

(a) ≥ 0 only when $\theta \geq 0$ (b) ≤ 0 for all real θ

(c) ≥ 0 for all real θ (d) ≤ 0 only when $\theta \leq 0$

$$f(\theta) = \sin\theta\left(\sin\theta + 3\sin\theta - 4\sin^3\theta\right)$$

$$= 4\sin^2\theta\left(1 - \sin^2\theta\right)$$

$$= 4\sin^2\theta\cos^2\theta$$

$$= (2\sin\theta\cos\theta)^2$$

$$= (\sin 2\theta)^2$$

$f(\theta)$'s range $\longrightarrow [0,1]$ $\Big\}$ $f(\theta) \geq 0$

$f(\theta)$, domain $\longrightarrow R$

Q) Let $f(\theta) = \sin\theta(\sin\theta + \sin 3\theta)$. Then $f(\theta)$ is

(a) ≥ 0 only when $\theta \geq 0$ (b) ≤ 0 for all real θ

(c) ≥ 0 for all real θ (d) ≤ 0 only when $\theta \leq 0$

Ans: (c)

(PYQ – 2024 – II)

In a triangle ABC

$$\tan A + \tan B + \tan C = k$$

What is the value of $\cot A \cot B \cot C$?

(a) $0 \cdot 5k$

(b) $1/k$

(c) $3/k$

(d) $1/k^3$

$$\cot A \cot B \cot C \rightarrow \frac{1}{\tan A \tan B \tan C}$$

$$\tan((A+B)+C) = \frac{\tan(A+B) + \tan C}{1 - \tan(A+B)\tan C} = \frac{\frac{\tan A + \tan B}{1 - \tan A \tan B} + \tan C}{1 - \frac{(\tan A + \tan B)\tan C}{1 - \tan A \tan B}}$$

$$= \frac{\tan A + \tan B + \tan C - \tan A \tan B \tan C}{1 - \tan A \tan B - \tan A \tan C - \tan B \tan C}$$

$$\tan(A+B+C) = \frac{(\tan A + \tan B + \tan C) - \tan A \tan B \tan C}{1 - \tan A \tan B - \tan B \tan C - \tan C \tan A}$$

(y)

$$\tan(180^\circ) = \frac{k - y}{}$$

$$0 = k - y$$

$$y = k$$

$$\cot A \cot B \cot C = \frac{1}{y} = \frac{1}{k}$$

In a triangle ABC

$$\tan A + \tan B + \tan C = k$$

What is the value of $\cot A \cot B \cot C$?

(a) $0 \cdot 5k$

(b) $1/k$

(c) $3/k$

(d) $1/k^3$

Ans: (b)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

(PYQ – 2024 – II)

What is $\sin 12° \sin 48°$ equal to?

(a) $\frac{\sqrt{5}-1}{4}$

(b) $\frac{\sqrt{5}+1}{4}$

(c) $\frac{\sqrt{5}-1}{8}$ ✓

(d) $\frac{\sqrt{5}+1}{8}$

$$\frac{1}{2}\left(2\sin 12° \sin 48°\right)$$

$$-2\sin A \sin B = \cos(A+B) - \cos(A-B)$$

$$2\sin A \sin B = \cos(A-B) - \cos(A+B)$$

$$= \frac{1}{2}\left(\cos(-36°) - \cos 60°\right)$$

$$= \frac{1}{2}\left(\cos 36° - \cos 60°\right)$$

$$= \frac{1}{2}\left(\left(\frac{\sqrt{5}+1}{4}\right) - \frac{1}{2}\right) = \frac{1}{2}\left(\frac{\sqrt{5}+1-2}{4}\right) = \frac{\sqrt{5}-1}{8}$$

NDA 1 2025 LIVE CLASS - MATHS - PART 5

What is $\sin 12^\circ \sin 48^\circ$ equal to?

(a) $\frac{\sqrt{5}-1}{4}$

(b) $\frac{\sqrt{5}+1}{4}$

(c) $\frac{\sqrt{5}-1}{8}$

(d) $\frac{\sqrt{5}+1}{8}$

Ans: (c)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

What is $\frac{\cos 17^\circ - \sin 17^\circ}{\cos 17^\circ + \sin 17^\circ}$ equal to? **(PYQ – 2024 – II)**

(a) $\tan 34^\circ$

(b) $\cot 34^\circ$

(c) $\tan 62^\circ$

(d) $\cot 62^\circ$ ✓

$$\frac{\cos A - \sin A}{\cos A + \sin A} = \tan(45^\circ - A)$$

Dividing by $\cos 17^\circ$,

$$\frac{1 - \tan 17^\circ}{1 + \tan 17^\circ} = \frac{\tan 45^\circ - \tan 17^\circ}{1 + \tan 45^\circ \tan 17^\circ}$$

$$\frac{\cos A + \sin A}{\cos A - \sin A} = \tan(45^\circ + A)$$

$$= \tan(45^\circ - 17^\circ)$$

$$= \tan 28^\circ$$

$$= \cot(90^\circ - 28^\circ) = \cot 62^\circ$$

NDA 1 2025 LIVE CLASS - MATHS - PART 5

What is $\frac{\cos 17^\circ - \sin 17^\circ}{\cos 17^\circ + \sin 17^\circ}$ equal to?

(a) $\tan 34^\circ$

(b) $\cot 34^\circ$

(c) $\tan 62^\circ$

(d) $\cot 62^\circ$

Ans: (d)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

(PYQ – 2024 – II)

Consider the following numbers :

I. $\tan 22 \cdot 5^\circ$

II. $\cot 22 \cdot 5^\circ$

III. $\tan 22 \cdot 5^\circ - \cot 22 \cdot 5^\circ$

How many of the above are irrational numbers?

(a) None

(b) Only one

(c) Only two

(d) All three

NDA 1 2025 LIVE CLASS - MATHS - PART 5

Consider the following numbers :

I. $\tan 22 \cdot 5^\circ$

II. $\cot 22 \cdot 5^\circ$

III. $\tan 22 \cdot 5^\circ - \cot 22 \cdot 5^\circ$

How many of the above are irrational numbers?

(a) None

(b) Only one

(c) Only two

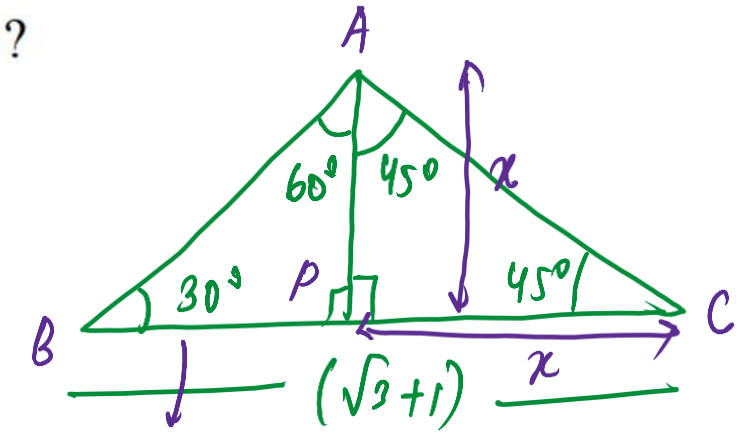
(d) All three

Ans: (c)

Q) If the angles of a triangle are 30° and 45° and the included side is $\left(\sqrt{3}+1\right)$ cm, then what is the area of the triangle ?

(a) $\left(\sqrt{3}+1\right)$ cm^2 (b) $\left(\sqrt{3}+3\right)$ cm^2

(c) $\frac{1}{2}\left(\sqrt{3}+1\right)$ cm^2 (d) $2\left(\sqrt{3}+1\right)$ cm^2



$\triangle ABP$, $\tan 30^\circ = \frac{x}{BP} \Rightarrow \frac{1}{\sqrt{3}} = \frac{x}{BP}$

$\triangle APC$, $\tan 45^\circ = \frac{x}{PC}$

Q) If the angles of a triangle are $30°$ and $45°$ and the included side is $\left(\sqrt{3}+1\right)$ cm, then what is the area of the triangle ?

(a) $\left(\sqrt{3}+1\right)$ cm^2

(b) $\left(\sqrt{3}+3\right)$ cm^2

(c) $\frac{1}{2}\left(\sqrt{3}+1\right)$ cm^2

(d) $2\left(\sqrt{3}+1\right)$ cm^2

Ans: (c)

Q) On simplifying $\frac{\sin^3 A + \sin 3A}{\sin A} + \frac{\cos^3 A - \cos 3A}{\cos A}$, we get

(a) $\sin 3A$ (b) $\cos 3A$

(c) $\sin A + \cos A$ (d) 3

Q) On simplifying $\frac{\sin^3 A + \sin 3A}{\sin A} + \frac{\cos^3 A - \cos 3A}{\cos A}$, we get

(a) $\sin 3A$ (b) $\cos 3A$

(c) $\sin A + \cos A$ (d) 3

Ans: (d)

Q) What is $\frac{1}{\sin 10^\circ} - \frac{\sqrt{3}}{\cos 10^\circ}$ equal to?

(a) 0 (b) 1 (c) 2 (d) 4

Q) What is $\frac{1}{\sin 10^\circ} - \frac{\sqrt{3}}{\cos 10^\circ}$ equal to?

(a) 0 (b) 1 (c) 2 (d) 4

Ans: (d)

Q) $\cot^{-1}\left[\dfrac{\sqrt{1-\sin x}+\sqrt{1+\sin x}}{\sqrt{1-\sin x}-\sqrt{1+\sin x}}\right]$ is equal to

(a) $\pi - x$

(b) $2\pi - x$

(c) $\dfrac{x}{2}$

(d) $\pi - \dfrac{x}{2}$

Q) $\cot^{-1}\left[\dfrac{\sqrt{1-\sin x}+\sqrt{1+\sin x}}{\sqrt{1-\sin x}-\sqrt{1+\sin x}}\right]$ is equal to

(a) $\pi - x$

(b) $2\pi - x$

(c) $\dfrac{x}{2}$

(d) $\pi - \dfrac{x}{2}$

Ans: (d)

Q) What is $\tan\left\{2\tan^{-1}\left(\frac{1}{3}\right)\right\}$ equal to?

(a) $\frac{2}{3}$ (b) $\frac{3}{4}$ (c) $\frac{3}{8}$

(d) $\frac{1}{9}$

Q) What is $\tan\left\{2\tan^{-1}\left(\frac{1}{3}\right)\right\}$ equal to?

(a) $\frac{2}{3}$ (b) $\frac{3}{4}$ (c) $\frac{3}{8}$

(d) $\frac{1}{9}$

Ans: (b)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

. If $4\sin^{-1}x+\cos^{-1}x=\pi$, then what is $\sin^{-1}x+4\cos^{-1}x$ equal to? **(PYQ – 2024 – II)**

(a) $\pi/2$

(b) π

(c) $3\pi/2$

(d) 2π

NDA 1 2025 LIVE CLASS - MATHS - PART 5

. If $4\sin^{-1}x+\cos^{-1}x=\pi$, then what is $\sin^{-1}x+4\cos^{-1}x$ equal to? **(PYQ – 2024 – II)**

(a) $\pi/2$

(b) π

(c) $3\pi/2$

(d) 2π

Ans: (c)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

What is $\cot^2(\sec^{-1}2) + \tan^2(\operatorname{cosec}^{-1}3)$ equal to? **(PYQ – 2024 – II)**

(a) 11/12

(b) 11/24

(c) 7/24

(d) 1/24

NDA 1 2025 LIVE CLASS - MATHS - PART 5

What is $\cot^2(\sec^{-1}2) + \tan^2(\operatorname{cosec}^{-1}3)$ equal to? **(PYQ – 2024 – II)**

(a) 11/12

(b) 11/24

(c) 7/24

(d) 1/24

Ans: (b)

Q) What is the value of $\sin^{-1}\frac{4}{5} + 2\tan^{-1}\frac{1}{3}$?

(a) $\frac{\pi}{3}$ (b) $\frac{\pi}{2}$ (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

Q) What is the value of $\sin^{-1}\frac{4}{5} + 2\tan^{-1}\frac{1}{3}$?

(a) $\frac{\pi}{3}$ (b) $\frac{\pi}{2}$ (c) $\frac{\pi}{4}$ (d) $\frac{\pi}{6}$

Ans: (b)

Q) What is the value of the following?

$$\cot\left[\sin^{-1}\left(\frac{3}{5}\right)+\cot^{-1}\left(\frac{3}{2}\right)\right]$$

(a) $\frac{6}{17}$ (b) $\frac{7}{16}$

(c) $\frac{16}{7}$ (d) $\frac{17}{6}$

Q) What is the value of the following?

$$\cot\left[\sin^{-1}\left(\frac{3}{5}\right)+\cot^{-1}\left(\frac{3}{2}\right)\right]$$

(a) $\frac{6}{17}$ (b) $\frac{7}{16}$

(c) $\frac{16}{7}$ (d) $\frac{17}{6}$

Ans: (a)

Q) If $\operatorname{cosec}\theta - \cot\theta = \frac{1}{\sqrt{3}}$, where $\theta \neq 0$, then what is the value of $\cos\theta$?

(a) 0

(b) $\frac{\sqrt{3}}{2}$

(c) $\frac{1}{2}$

(d) $\frac{1}{\sqrt{2}}$

Q) If $\operatorname{cosec}\theta - \cot\theta = \frac{1}{\sqrt{3}}$, where $\theta \neq 0$, then what is the value of $\cos\theta$?

(a) 0

(b) $\frac{\sqrt{3}}{2}$

(c) $\frac{1}{2}$

(d) $\frac{1}{\sqrt{2}}$

Ans: (c)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

(PYQ – 2024 – II)

If

$$\frac{x}{\cos\theta} = \frac{y}{\cos\left(\frac{2\pi}{3} - \theta\right)} = \frac{z}{\cos\left(\frac{2\pi}{3} + \theta\right)}$$

then what is $x + y + z$ equal to?

(a) -1

(b) 0

(c) 1

(d) 3

NDA 1 2025 LIVE CLASS - MATHS - PART 5

If

$$\frac{x}{\cos\theta} = \frac{y}{\cos\left(\frac{2\pi}{3} - \theta\right)} = \frac{z}{\cos\left(\frac{2\pi}{3} + \theta\right)}$$

then what is $x + y + z$ equal to?

(a) -1

(b) 0

(c) 1

(d) 3

Ans: (b)

NDA 1 2025 LIVE CLASS - MATHS - PART 5

If $p\tan(\theta - 30°) = q\tan(\theta + 120°)$, then what is $(p+q)/(p-q)$ equal to? **(PYQ – 2024 – II)**

(a) $\sin 2\theta$

(b) $\cos 2\theta$

(c) $2\sin 2\theta$

(d) $2\cos 2\theta$

If $p\tan(\theta - 30°) = q\tan(\theta + 120°)$, then what is $(p+q)/(p-q)$ equal to?

(a) $\sin 2\theta$

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(d) $2\cos 2\theta$

Ans: (d)

Q) If $7\sin\theta + 24\cos\theta = 25$, then what is the value of $(\sin\theta + \cos\theta)$?

(a) 1 (b) $\frac{26}{25}$ (c) $\frac{6}{5}$ (d) $\frac{31}{25}$

Q) If $7\sin\theta + 24\cos\theta = 25$, then what is the value of $(\sin\theta + \cos\theta)$?

(a) 1 (b) $\frac{26}{25}$ (c) $\frac{6}{5}$ (d) $\frac{31}{25}$

Ans: (d)

NDA 1 2025

LIVE

MATHS

TRIGONOMETRY

CLASS 6

NAVJYOTI SIR

Crack
EXAMS