



RAILWAY NTPC



MATHS

TRIGONOMETRY

RRB/RRC BOARD

के सभी प्रश्न एक ही जगह

DAY - 22 | 5:00 PM

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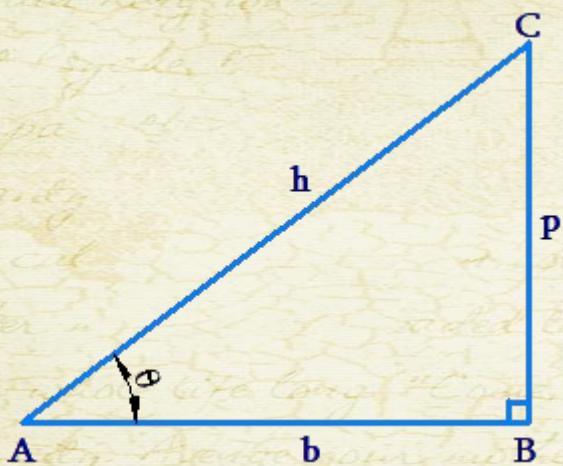
BANK

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SSC

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RAILWAY



$$S = \frac{P}{H} \quad C = \frac{B}{H} \quad T = \frac{P}{B}$$

P=Perp
B=Base
H=Hyp

Pandit Badri Prasad

Har Har Bola

Sona chandi tole

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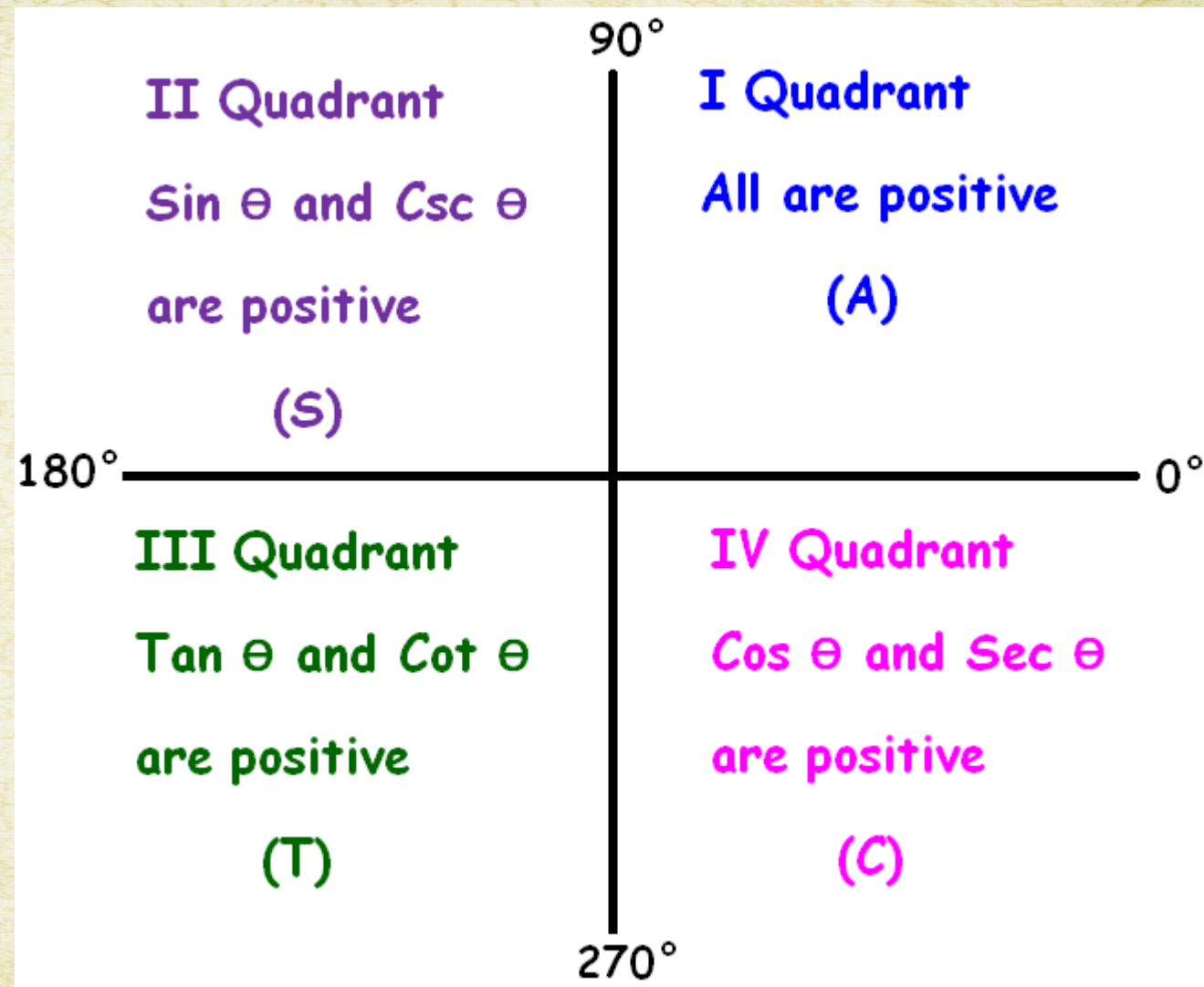
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Reflected in $\theta = 0$ ^[5]	Reflected in $\theta = \frac{\pi}{4}$ (co-function identities) ^[6]	Reflected in $\theta = \frac{\pi}{2}$
$\sin(-\theta) = -\sin \theta$ $\cos(-\theta) = +\cos \theta$ $\tan(-\theta) = -\tan \theta$ $\csc(-\theta) = -\csc \theta$ $\sec(-\theta) = +\sec \theta$ $\cot(-\theta) = -\cot \theta$	$\sin(\frac{\pi}{2} - \theta) = +\cos \theta$ $\cos(\frac{\pi}{2} - \theta) = +\sin \theta$ $\tan(\frac{\pi}{2} - \theta) = +\cot \theta$ $\csc(\frac{\pi}{2} - \theta) = +\sec \theta$ $\sec(\frac{\pi}{2} - \theta) = +\csc \theta$ $\cot(\frac{\pi}{2} - \theta) = +\tan \theta$	$\sin(\pi - \theta) = +\sin \theta$ $\cos(\pi - \theta) = -\cos \theta$ $\tan(\pi - \theta) = -\tan \theta$ $\csc(\pi - \theta) = +\csc \theta$ $\sec(\pi - \theta) = -\sec \theta$ $\cot(\pi - \theta) = -\cot \theta$



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θ	0° 0°	30° $\frac{\pi}{6}$	45° $\frac{\pi}{4}$	60° $\frac{\pi}{3}$	90° $\frac{\pi}{2}$	180° π	270° $\frac{3\pi}{2}$	360° 2π
$\sin \theta$	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1	0	-1	0
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0	-1	0	1
$\tan \theta$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	N.D.	0	N.D.	0
$\operatorname{cosec} \theta$	N.D.	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1	N.D.	-1	N.D.
$\sec \theta$	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	N.D.	-1	N.D.	1
$\cot \theta$	N.D.	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0	N.D.	0	N.D.

Trigonometric Identities

$$(1) \cos^2 \theta + \sin^2 \theta = 1$$

$$(2) 1 + \tan^2 \theta = \sec^2 \theta$$

$$(3) 1 + \cot^2 \theta = \operatorname{cosec}^2 \theta$$

$$\sin 3\theta = 3\sin\theta - 4\sin^3\theta$$

$$\cos 3\theta = 4\cos^3\theta - 3\cos\theta$$

$$\tan 3\theta = \frac{3\tan\theta - \tan^3\theta}{1 - 3\tan^2\theta}$$

$$\cot 3\theta = \frac{\cot^3\theta - 3\cot\theta}{3\cot^2\theta - 1}$$

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

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

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

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

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

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

$$\sin 2\theta = 2\sin\theta \cos\theta$$

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

$$= 2\cos^2\theta - 1$$

$$= 1 - 2\sin^2\theta$$

$$\tan 2\theta = \frac{2\tan\theta}{1 - \tan^2\theta}$$

If $\cos \theta = \frac{1}{\sqrt{5}}$ then find the value of $\sin \theta$.

(1) $\frac{2}{\sqrt{5}}$

(2) 2

(3) $\frac{1}{\sqrt{5}}$

(4) 1

If $\sin A = \frac{15}{17}$ then find the value of $\frac{\operatorname{cosec} A + \cot A}{\operatorname{Cosec} A - \cot A}$

GROUP D

(1) 25/9

(2) 26/27

(3) 25/7

(4) 25/8

If $\tan \theta - \cot \theta = 0$, $0^\circ < \theta < 90^\circ$, then value of $(\sin \theta - \cos \theta)$ is

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(1) 1

(2) 2

(3) -1

(4) 0

If $0^\circ \leq \theta \leq 90^\circ$ and $\sin \theta + \cos \theta = 17/13$ then the value of $\sin \theta - \cos \theta$ is :

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- (1) $3/13$
- (2) $10/13$
- (3) $5/13$
- (4) $7/13$

If $\frac{\sin\theta + \cos\theta}{\sin\theta - \cos\theta} = 7$, then the value of $\tan \theta$ is equal to :

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(1) $2/3$

(2) $4/3$

(3) $1/3$

(4) $5/3$

If $\cos \theta + \sec \theta = \sqrt{3}$, then the value of $\cos^3 \theta + \sec^3 \theta$ is -

RRB 2018

(1) -1

(2) $\sqrt{3}$

(3) 0

(4) 1

If $\sin \theta + \cos \theta = \sqrt{2} \cos (90 - \theta)$, then $\cot \theta$ is :

SSC

(1) 0

(2) $\sqrt{2}$

(3) $\sqrt{2}+1$

(4) $\sqrt{2}-1$

If $\sqrt{2} \cdot \cos (5x + 5) = \cot 45^\circ$, then the value of x in degree is:

SSC

(1) 10

(2) 8

(3) 11

(4) 0

$$\tan \theta = \frac{7}{24} \text{ then find } \frac{-P}{28} = \frac{\tan \theta - \sec \theta}{\sin \theta}$$

FIND P?

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D 2018

(1) 50

(2) 75

(3) 100

(4) 25

$$\operatorname{cosec} \theta + \cot \theta = 2, \cot \theta = ?$$

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(1) 0

(2) 1

(3) 0.5

(4) 0.75

$2 \sec^2 x - \tan^2 x = 5$ if $0^\circ \leq x \leq 90^\circ$ Find $x = ?$

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(1) 30

(2) 90

(3) 45

(4) 60

$3 \tan \theta = 2$ find $\frac{2\sin\theta - \cos\theta}{2\cos\theta - \sin\theta}$

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(1) $\frac{1}{3}$

(2) 0

(3) $\frac{1}{4}$

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

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$$\sqrt{3} \tan \theta = 1 \text{ find } \cos 2\theta.$$

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(1) $1/2$

(2) $1/3$

(3) $1/4$

(4) 1

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