RPF SI & CONSTABLE 2024

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MATHS

Trigonometry



LIVE STREAMING 21-10-2024 11:00AM

Class Daily 11-12

Trignometry (त्रिकोणमिति)

तीन कोण → 30°, 45°, 60°

$\sin\theta$ –

$\cos\theta$ –

$\tan\theta$ –

$\operatorname{cosec}\theta = \frac{1}{\sin\theta}$

$\sec\theta = \frac{1}{\cos\theta}$

$\cot\theta = \frac{1}{\tan\theta}$

	$\theta = 0^\circ$	$\theta = 30^\circ$	$\theta = 45^\circ$	$\theta = 60^\circ$	$\theta = 90^\circ$
$\sin\theta$	$\sqrt{\frac{0}{4}} = 0$	$\sqrt{\frac{1}{4}} = \frac{1}{2}$	$\sqrt{\frac{2}{4}} \Rightarrow \frac{1}{\sqrt{2}}$	$\sqrt{\frac{3}{4}} \Rightarrow \frac{\sqrt{3}}{2}$	$\sqrt{\frac{4}{4}} = 1$
$\cos\theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
$\Leftarrow \tan\theta$ ($\frac{\sin\theta}{\cos\theta}$)	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	∞
$\Leftarrow \cot\theta$ ($\frac{1}{\tan\theta}$)	∞	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0
$\Leftarrow \sec\theta$ ($\frac{1}{\cos\theta}$)	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	∞
$\Leftarrow \operatorname{cosec}\theta$ ($\frac{1}{\sin\theta}$)	∞	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1

$\Rightarrow \cos\theta$

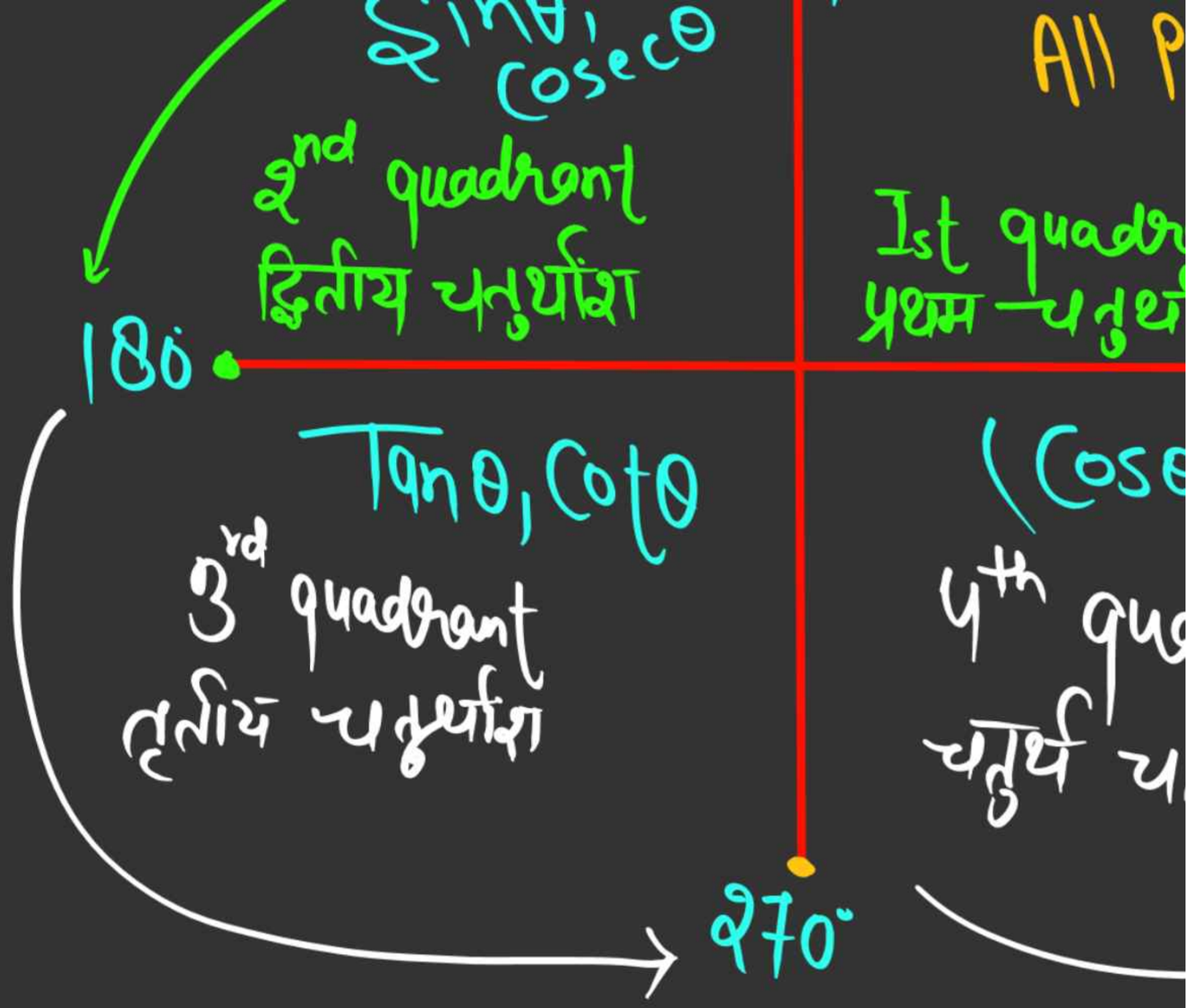
$\Rightarrow \cot\theta$

$\Rightarrow \operatorname{cosec}\theta$

$(90+\theta) \Rightarrow \cos\theta$

$(90-\theta) \Rightarrow \cos\theta$

$\sin(90-\theta) = \sin\theta$



$\sin(90+\theta) = \cos\theta$

$\sin(90-\theta) = \cos\theta$

$\cos(90-\theta) = \sin\theta$

$\cos(90+\theta) = -\sin\theta$

$\tan(90-\theta) = \cot\theta$

$\tan(90+\theta) = -\cot\theta$

$\cot(90-\theta) \Rightarrow \tan\theta$

$\cot(90+\theta) \Rightarrow -\tan\theta$

$\cos(135^\circ) =$

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$\cos(135^\circ) = \cos(90+45)$

$\Rightarrow -\sin 45^\circ$

$\Rightarrow -\frac{1}{\sqrt{2}}$

1. $\sin 150^\circ = ?$ $\sin(90+60) \Rightarrow \cos 60^\circ \Rightarrow \frac{1}{2}$

↳ $\sin(180-30) = \sin 30^\circ = \frac{1}{2}$

2. $\tan(150^\circ) = ?$

→ $\tan(90+60) \Rightarrow -\cot 60^\circ \Rightarrow -\frac{1}{\sqrt{3}}$

→ $\tan(180-30) \Rightarrow -\tan 30^\circ \Rightarrow -\frac{1}{\sqrt{3}}$

3. $\cot 120^\circ = ?$

→ $\cot(90+30) \Rightarrow -\tan 30^\circ \Rightarrow -\frac{1}{\sqrt{3}}$

→ $\cot(180-60) \Rightarrow -\cot 60^\circ \Rightarrow -\frac{1}{\sqrt{3}}$

4. $\operatorname{Cosec} 120^\circ$

↳ $\operatorname{Cosec}(90+30) \Rightarrow \sec 30^\circ \Rightarrow \frac{2}{\sqrt{3}}$

↳ $\operatorname{Cosec}(180-60) \Rightarrow \operatorname{Cosec} 60^\circ \Rightarrow \frac{2}{\sqrt{3}}$

7. Find the value ofse c(2100)°.

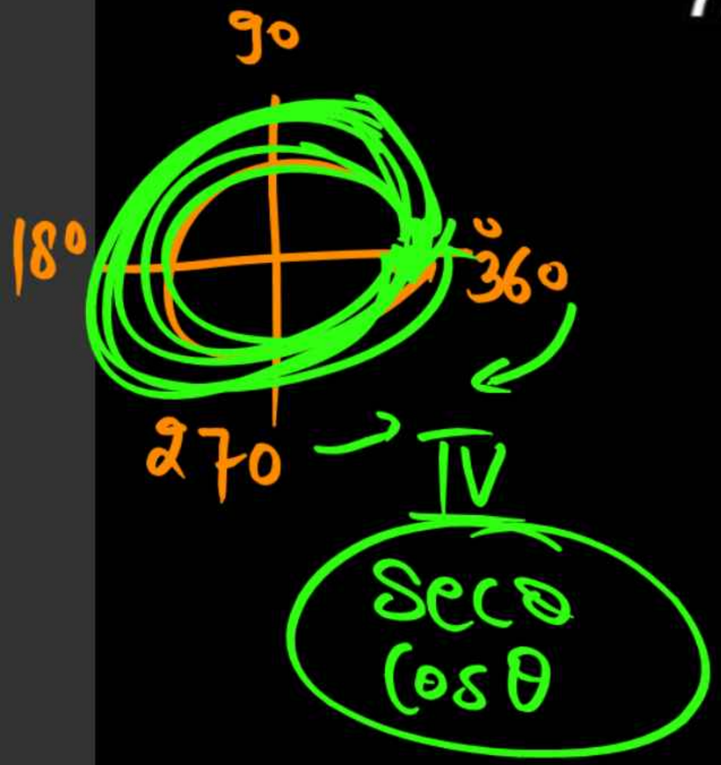
sec (2100)° का मान ज्ञात कीजिए।

(a) 1

(b) 4

(c) 2

(d) 3



$= \sec 2100^\circ$

$= \sec(6 \times 360 - 60^\circ)$

$= \sec 60^\circ$

$\Rightarrow 2$

$360^\circ \times 6 = 2160^\circ$