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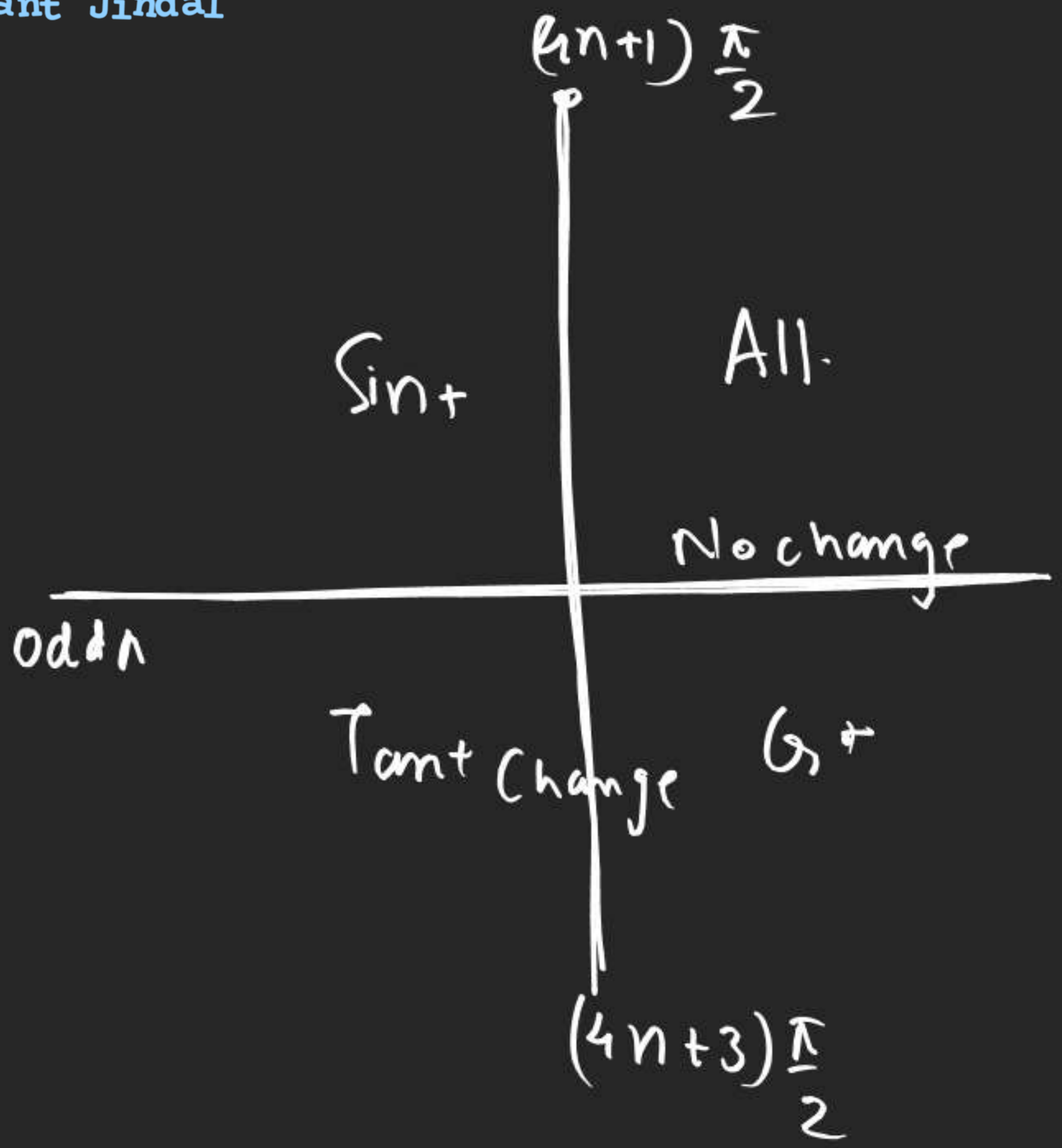
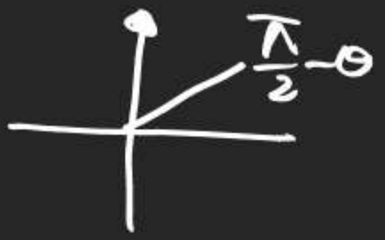
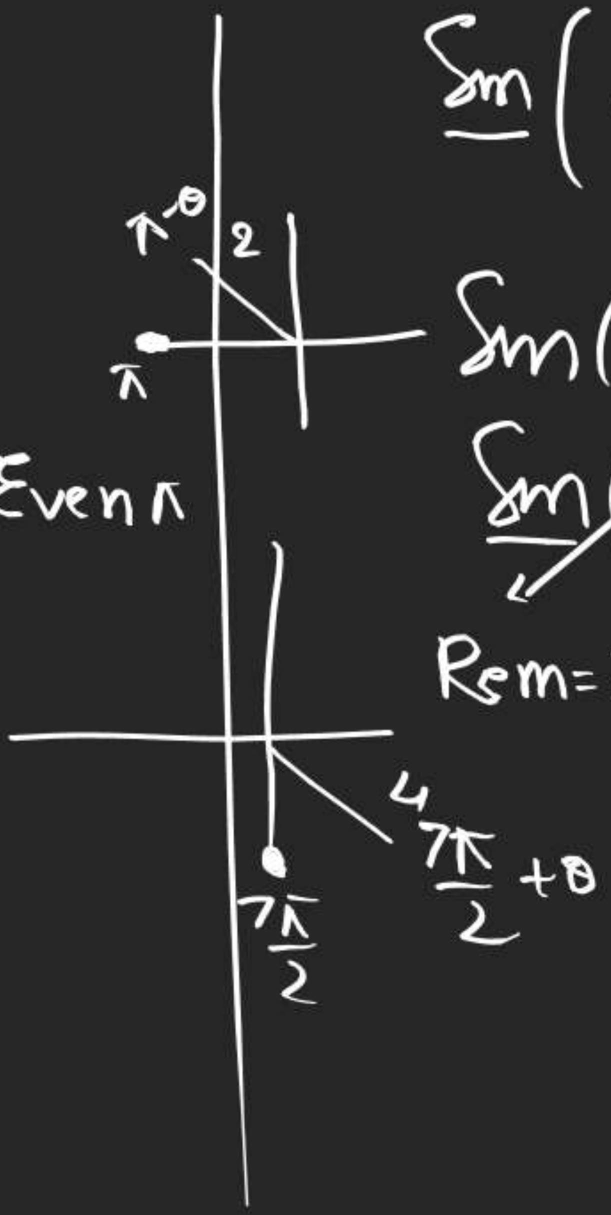




$$\underline{\sin}\left(\frac{\pi}{2}-\theta\right) = +\cos\theta$$



$$\sin(\pi-\theta) = +\sin\theta$$

$$\cancel{\underline{\sin}}\left(\frac{7\pi}{2}+\theta\right) = -\cos\theta$$

Rem=3

$$\sin(32\pi+\theta)$$

$$= +\sin\theta$$

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Rem = 3

$$\csc\left(\frac{7\pi}{2}-\theta\right) = -\sec\theta$$

$$\tan\left(\frac{7\pi}{2}-\theta\right) = +\cot\theta$$

3

$$\csc(31\pi-\theta) = +\csc\theta$$

$$\sec\left(\frac{31\pi}{2}+\theta\right) = +\csc\theta$$

$4 \overline{)31}(7$
28
3

$$\tan(\pi+\theta) = +\tan\theta$$

$$\tan\left(\frac{3\pi}{2}-\theta\right) = +\cot\theta$$

$$\cot(\boxed{17}\pi+\theta) = +\cot\theta$$

$$\cos\left(\frac{9\pi}{2}-\theta\right) = +\sin\theta$$

$4 \overline{)9}(2$
8
1

$$\sin(\boxed{3\pi}+\theta) = -\sin\theta$$

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Q $\sin(120^\circ) = \sin(90^\circ + 30^\circ)$

$= \sin\left(\frac{\pi}{2} + 30^\circ\right)$

$= +\cos 30^\circ$

$= \frac{\sqrt{3}}{2}$

Q $\cos 120^\circ = \cos(90 + 30^\circ)$

$= \cos\left(\frac{\pi}{2} + 30^\circ\right)$

$= -\sin 30^\circ$

$= -\frac{1}{2}$

Q $\tan 120^\circ = \tan(90^\circ + 30^\circ)$

$= \tan\left(\frac{\pi}{2} + 30^\circ\right)$

$= -\cot 30^\circ$

$= -\sqrt{3}$

Q $\cos 150^\circ = \cos(90^\circ + 60^\circ)$

$= \cos\left(\frac{\pi}{2} + 60^\circ\right)$

$= -\sin 60^\circ$

$= -\frac{\sqrt{3}}{2}$

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$90°, 180, 270, 360$

Q $\tan 300° = \tan(360° - 60°)$

$= \tan(2\pi - 60°)$

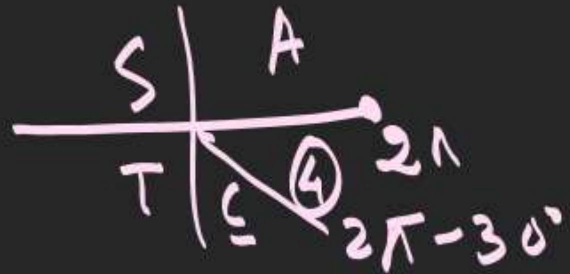
$= -\tan 60°$

$= -\sqrt{3}$

Q $\sec(330°)$

$\sec(360° - 30°)$

$= \sec(2\pi - 30°)$



$= +\sec 30°$

$= \frac{1}{\cos 30} = \frac{1}{\frac{\sqrt{3}}{2}} = \frac{2}{\sqrt{3}}$

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Q $\cancel{\sec}\ \cos(240^\circ)$

$= \cos(180^\circ + 60^\circ)$

$= \cos(\pi + 60^\circ)$

$= -\cos 60^\circ$

$= -\frac{1}{2}$

Q $\sec(600^\circ)$

$90^\circ, 180^\circ, 270^\circ, 360, 450, 540, \underline{630^\circ}$

7×90

$\frac{7\pi}{2}$

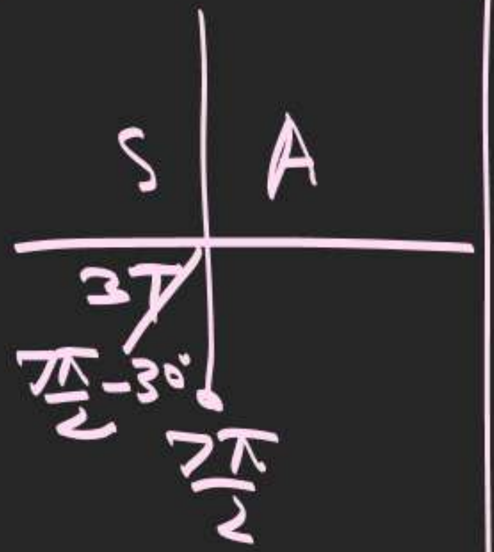
$\sec(630^\circ - 30^\circ)$

$\sec\left(\frac{7\pi}{2} - 30^\circ\right)$

$= -\operatorname{cosec} 30^\circ$

$= -\frac{1}{\sin 30^\circ}$

$= -\frac{1}{1/2} = -2$



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$\boxed{\text{Yad}}$

	$0°$	$30°$	$45°$	60	90	120	135	150	$180°$
$\sin\theta$	0	$1/2$	$1/\sqrt{2}$	$\sqrt{3}/2$	1	$\sqrt{3}/2$	$1/\sqrt{2}$	$1/2$	0
$\cos\theta$	1	$\sqrt{3}/2$	$1/\sqrt{2}$	$1/2$	0	$-1/2$	$-1/\sqrt{2}$	$-\sqrt{3}/2$	-1
$\tan\theta$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	∞	$-\sqrt{3}$	-1	$-\frac{1}{\sqrt{3}}$	0
$\cot\theta$	∞	$\sqrt{3}$	1	$1/\sqrt{3}$	0	$-1/\sqrt{3}$	-1	$-\sqrt{3}$	$-\infty$
$\mathrm{cosec}\,\theta$	∞	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	∞
$\sec\theta$	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	∞	-2	$-\sqrt{2}$	$-\frac{2}{\sqrt{3}}$	-1

$\boxed{4}$ $\boxed{8}$

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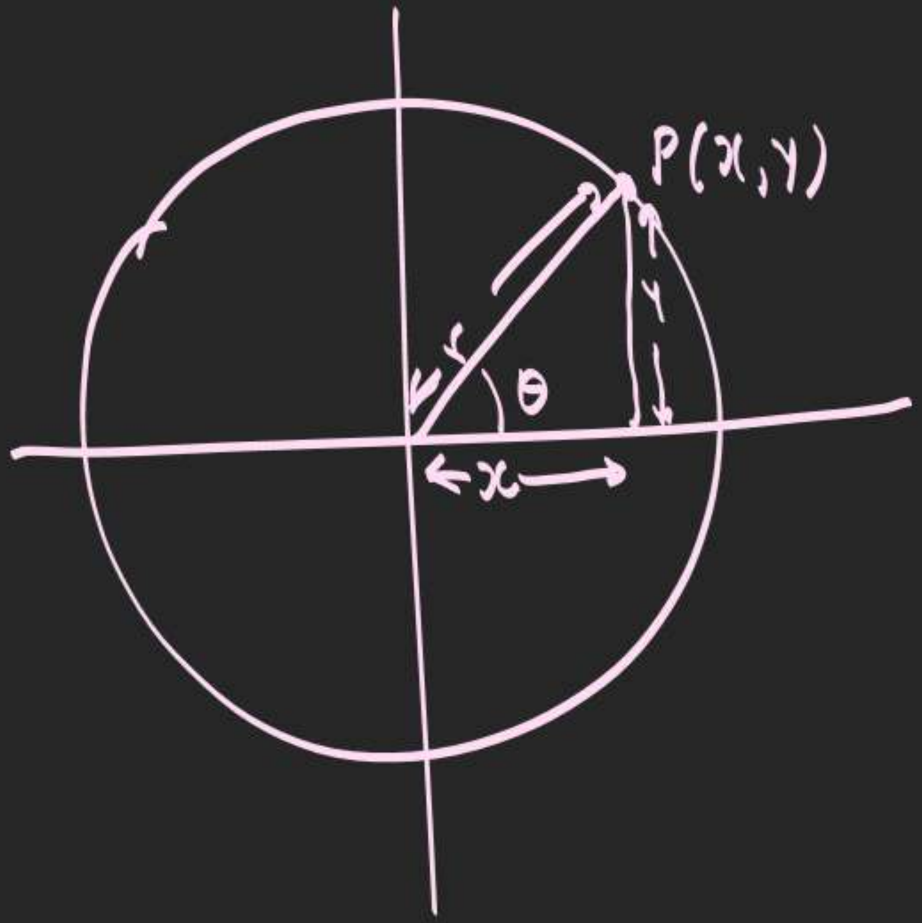
Actual Defination of Sinθ & Cosθ

$$\sin\theta = \frac{\text{Ordinate of Pt. P}}{\text{rad.}} = \frac{\text{Y Coord}}{\text{rad}}$$

$$\cos\theta = \frac{\text{Abscissa of Pt. P}}{\text{rad}} = \frac{\text{x Coord}}{\text{rad}}$$



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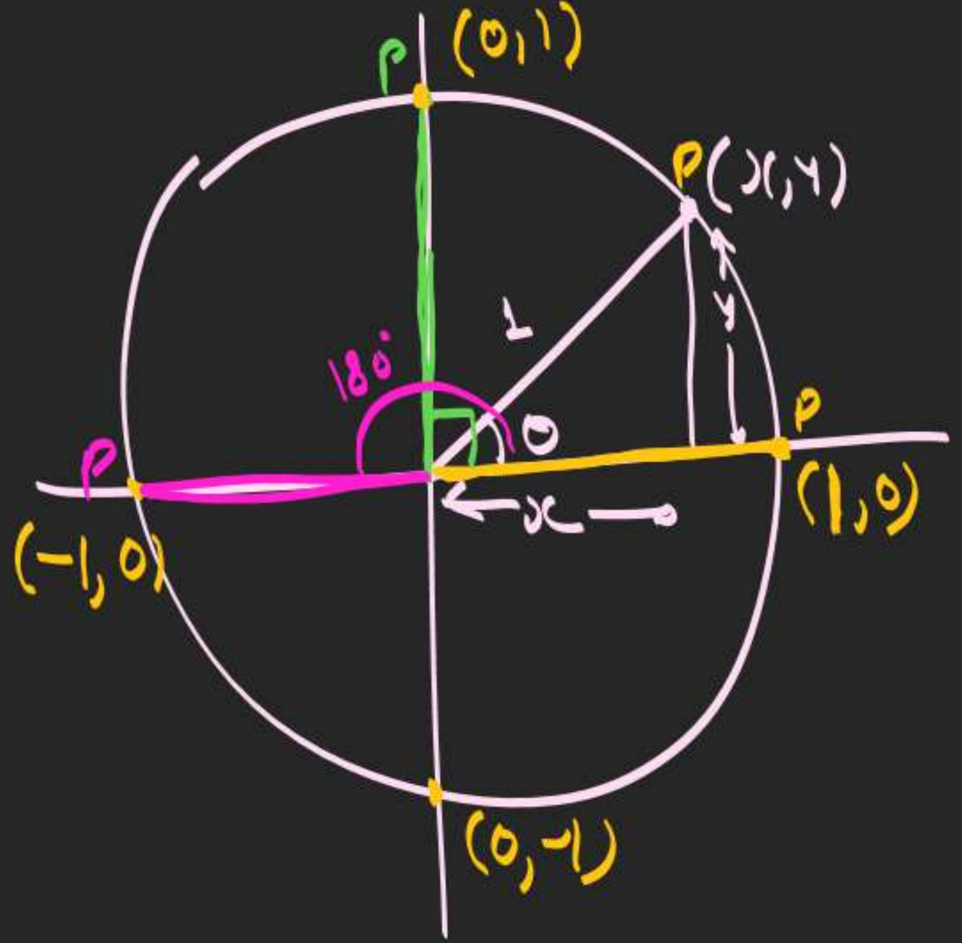
When Circle is Unit Circle.

Unit Circle is circle with rad = 1



$\sin\theta = \frac{y \text{ Coord}}{1} = y$

$\cos\theta = \frac{x \text{ Coord}}{1} = x$

$\sin\left(\frac{\pi}{2}-\theta\right) = +\cos\theta$ Kyu?

$\sin\left(\pi-\theta\right) = +\sin\theta$ Kyu

Logic Adv Level

$\cos 0° = \frac{1}{1} = 1$	$\cos 90° = \frac{0}{1} = 0$	$\cos 180° = \frac{-1}{1} = -1$
$\sin 0° = \frac{0}{1} = 0$	$\sin 90° = \frac{1}{1} = 1$	$\sin 180° = \frac{0}{1} = 0$

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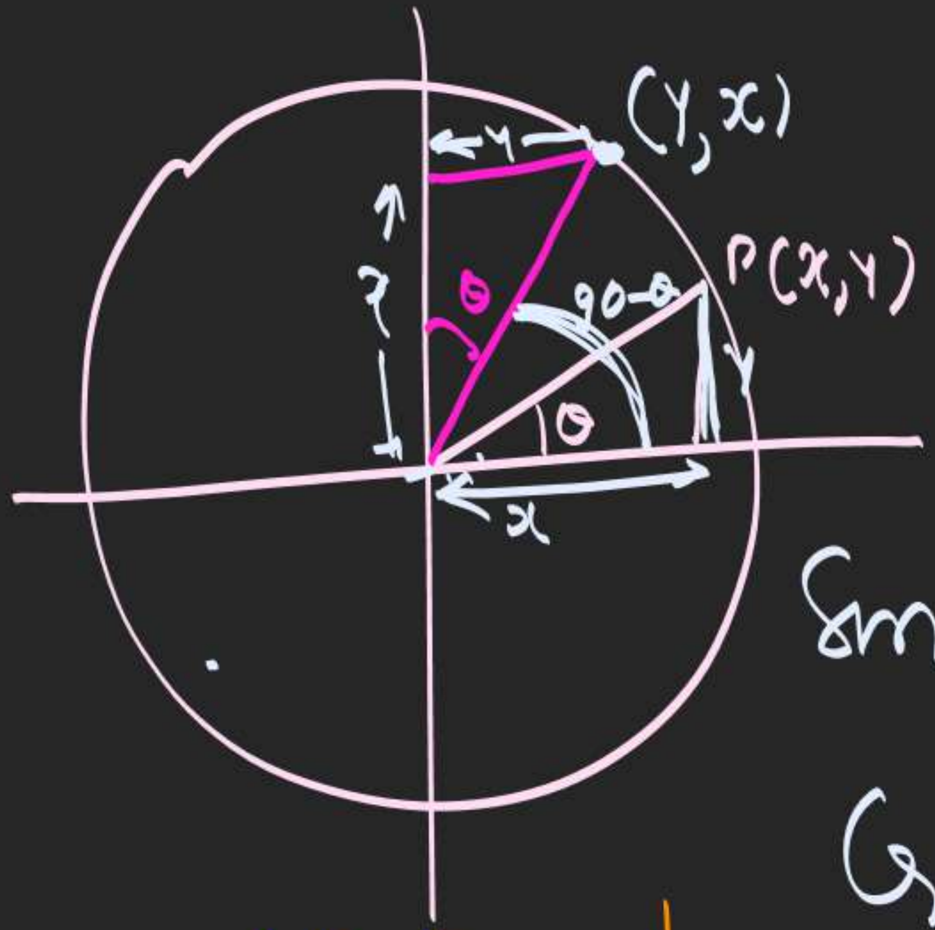
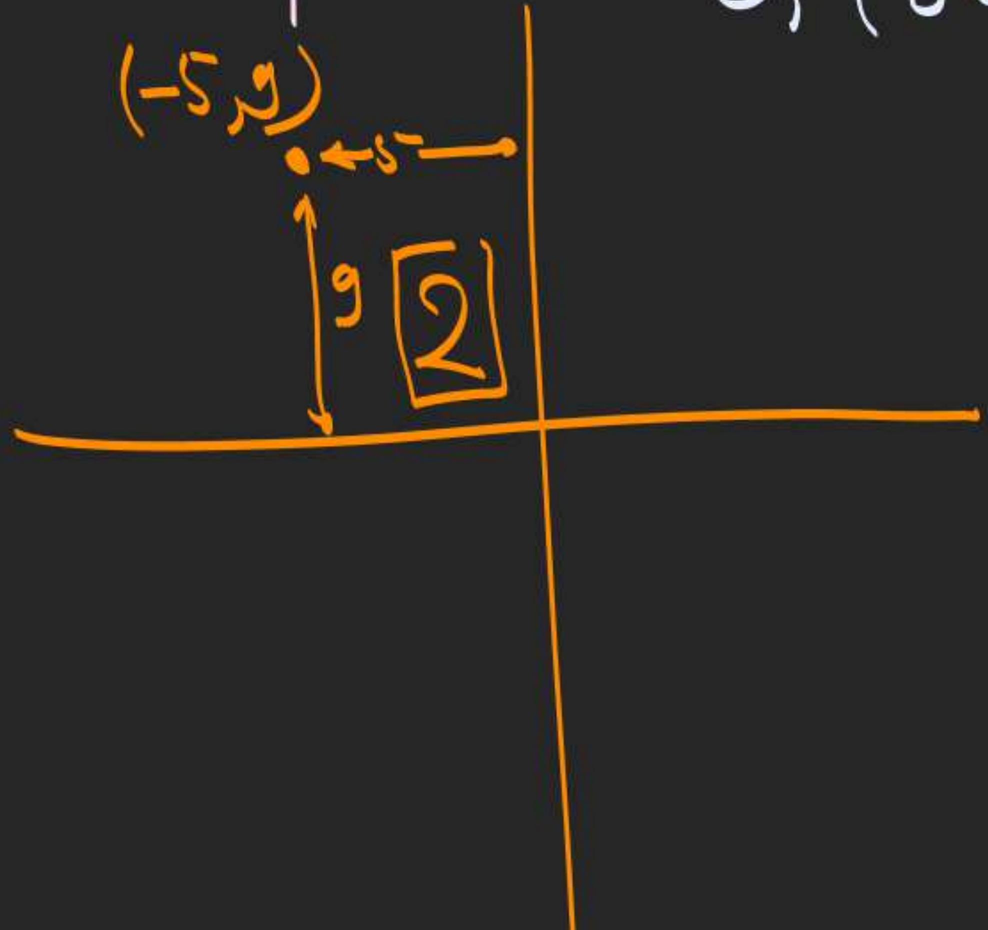
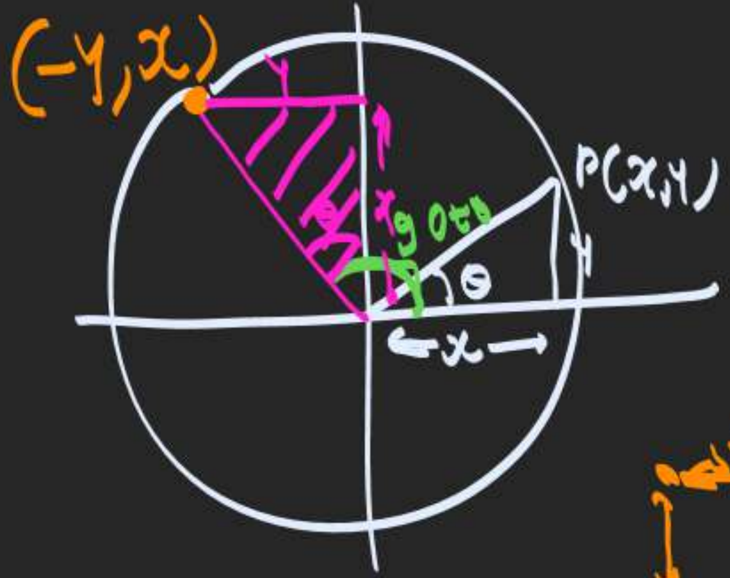


$\sin(90-\theta) = \frac{x}{r} = \cos\theta$

$\cos(90-\theta) = \frac{y}{r} = \sin\theta$





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

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

$\sin(90+\theta) = \frac{y\ \text{coor}}{r} = \frac{x}{r} = \cos\theta$

$\cos(90+\theta) = \frac{x\ \text{coord}}{r} = -\frac{y}{r} = -\sin\theta$

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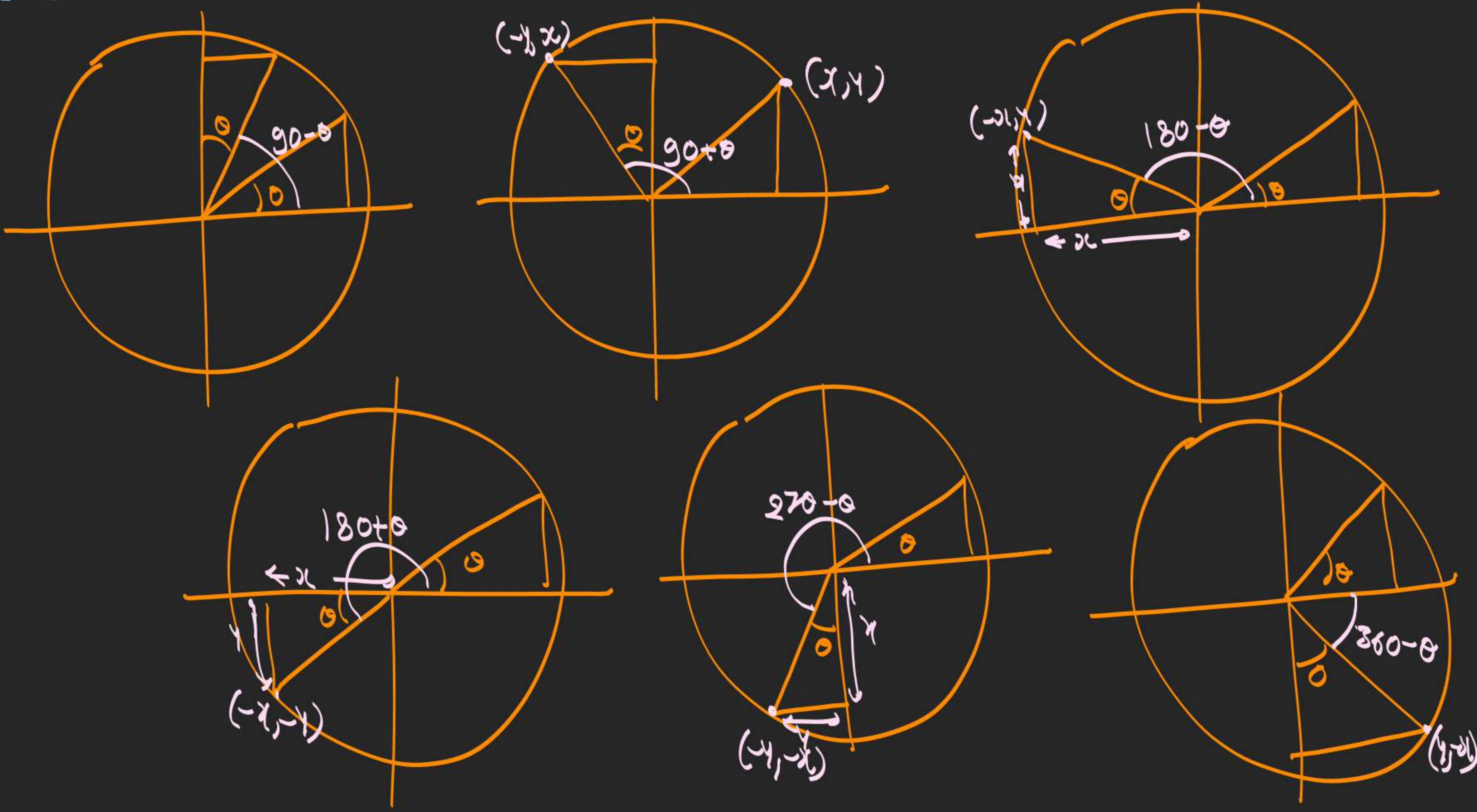
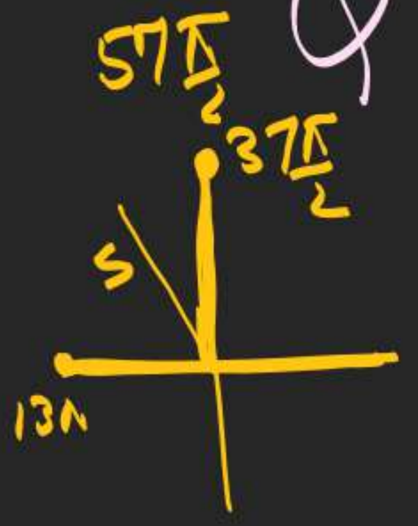




Q $\sin\left(\frac{31\pi}{2}+\theta\right) \cdot \cos(13\pi+\theta) \cdot \tan\left(\frac{\overset{13}{\cancel{26}}\pi}{\cancel{2}}-\theta\right) \cdot \cot\left(\theta-\frac{57\pi}{2}\right)$

$\overset{\boxed{2}}{\sin\left(\frac{37\pi}{2}+\theta\right)}\ \overset{\boxed{3}\,T}{\cos(13\pi+\theta)}\ \overset{\boxed{2}}{\tan(13\pi-\theta)}\ \overset{\boxed{1}}{\left\{-\cot\left(\frac{57\pi}{2}-\theta\right)\right\}}$

$(+\cos\theta)\ (-\cos\theta)\ (+\tan\theta)\ \{+(+\tan\theta)\}$

$-\cos^2\theta \times \tan^2\theta$

$-\cancel{\cos^2\theta} \times \frac{\sin^2\theta}{\cancel{\cos^2\theta}} = -\sin^2\theta$

Cos, sec - Minus Ko Kha Jate $(-\theta)$ hone Par h.

$\sin(-\theta) = \sin(0-\theta)$

$= -\sin\theta$

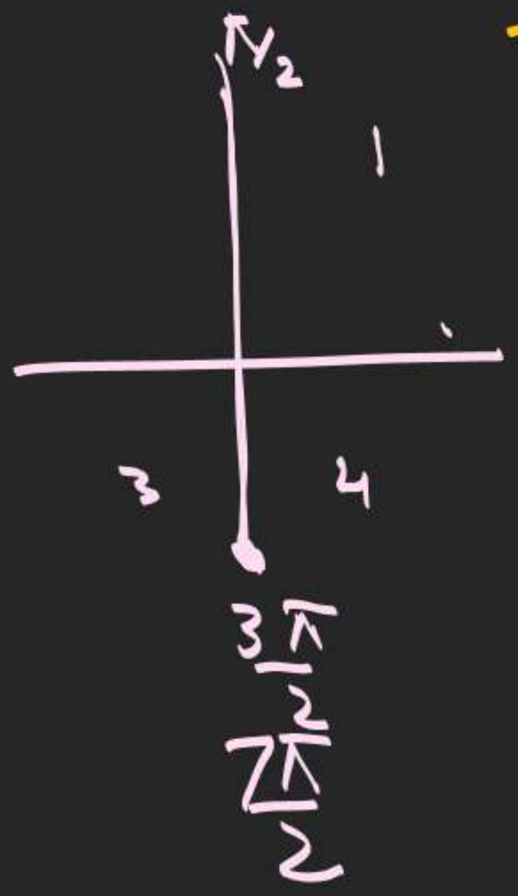
$\cos(-\theta) = +\cos\theta$

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

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

$\operatorname{cosec}(-\theta) = -\operatorname{cosec}\theta$

$\sec(-\theta) = +\sec\theta$



Q $$\frac{\tan\left(x-\frac{\pi}{2}\right)\cdot\cos\left(\frac{3\pi}{2}+x\right)\cdot\sin^3\left(\frac{\pi}{2}-x\right)}{\cos\left(x-\frac{\pi}{2}\right)\cdot\tan\left(\frac{3\pi}{2}+x\right)} = ?$$

$$\frac{\tan\left(-\left(\boxed{\tfrac{\pi}{2}}-x\right)\right)\cos\left(\frac{3\pi}{2}+x\right)\left(\sin\left(\boxed{\tfrac{\pi}{2}}-x\right)\right)^3}{\cos\left(+\left(\frac{\pi}{2}-x\right)\right)\tan\left(\frac{3\pi}{2}+x\right)}$$

$$+\frac{(+\cancel{\cot x})(+\cancel{\sin x})(+\cos x)^3}{(+\cancel{\sin x})(-\cancel{\cot x})} = -\cos^3 x$$

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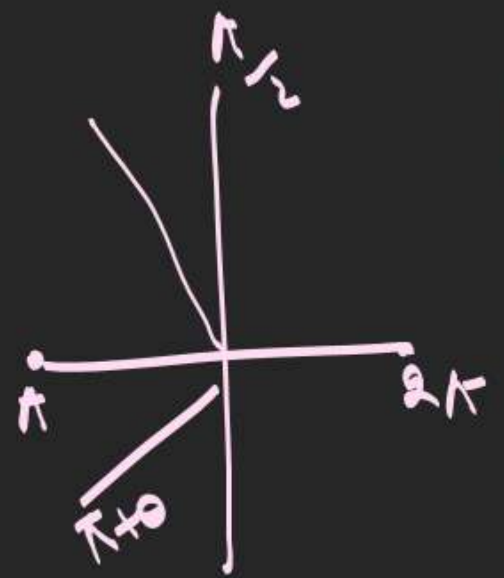
-1

Q $$\frac{\cos(90+\theta)\,\sec(-\theta)\,\tan(180+\theta)}{\sec(360-\theta)\,\sin(180+\theta)\,\cot(90-\theta)} = ?$$



$$\frac{\cos(\overset{\boxed{2}}{\tfrac{\pi}{2}}+\theta)\cdot\sec\theta\cdot\tan^{\boxed{3}}(\pi+\theta)}{\sec(\underset{4}{2\pi}-\theta)\,\sin(\underset{3}{\pi+\theta})\,\cot(\underset{1}{\tfrac{\pi}{2}}-\theta)}$$

$$\frac{(+\cancel{\sin}\,\theta)\,\cancel{\sec}\,\theta\times(+\cancel{\tan}\,\theta)}{(+\cancel{\sec}\,\theta)\,(+\cancel{\sin}\,\theta)\,(+\cancel{\tan}\,\theta)} = 1$$

$$\frac{-\sin\theta\;\sec\theta\;+\tan\theta}{\sec\theta\;-\sin\theta\;\tan\theta} = 1$$

P.T.

Q $\sin(-65°) = -\sin 65°$

Q $\cos 27° \cdot \underline{\tan 27°} \cdot \tan 63° \cdot \csc 63° = ?$

$\cancel{\cos 27°} \cdot \frac{\sin 27°}{\cancel{\cos 27°}} \cdot \frac{\sin 63°}{\cos 63°} \cdot \csc 63°$

$\underline{\sin}(90-63°) \cdot \frac{\cancel{\sin 63°}}{\cos 63°} \times \frac{1}{\cancel{\sin 63°}}$

$+\cos \cancel{63°} \times \frac{1}{\cos \cancel{63°}} = 1$

Q $\tan\theta + \tan(\pi-\theta) + \cot\left(\frac{\pi}{2}+\theta\right) - \tan(2\pi-\theta) = 0$

Q $\frac{\tan(90+\theta) \cdot \csc(180+\theta)}{\cos(180+\theta) \ \csc(-\theta)} = -1$

Q $\frac{\cos\theta}{\sin(90+\theta)} + \frac{\sin(-\theta)}{\sin(180+\theta)} - \frac{\tan(90+\theta)}{\cot\theta} = 3$

Q $\frac{\sin 135° - \cos 120°}{\sin 135° + \cos 120°} = 3+2\sqrt{2}$

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Q $4\cot^2 45^\circ - \sec^2 60^\circ + \sin^2 30^\circ = \frac{1}{4}$

Q $\tan^2\frac{\pi}{6} + \tan^2\frac{\pi}{4} + \tan^2\frac{\pi}{3} = \frac{13}{3}.$