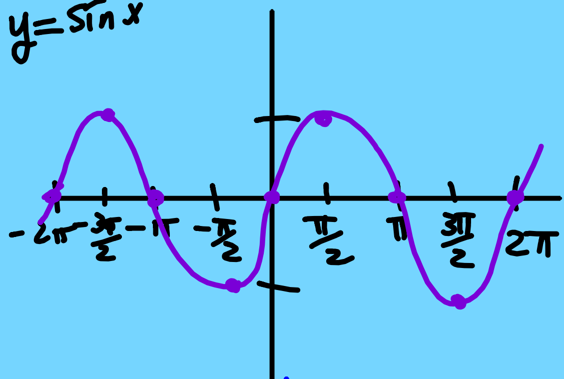
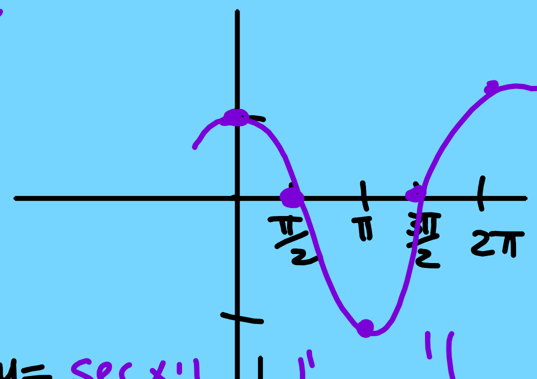
TRIG REVIEW

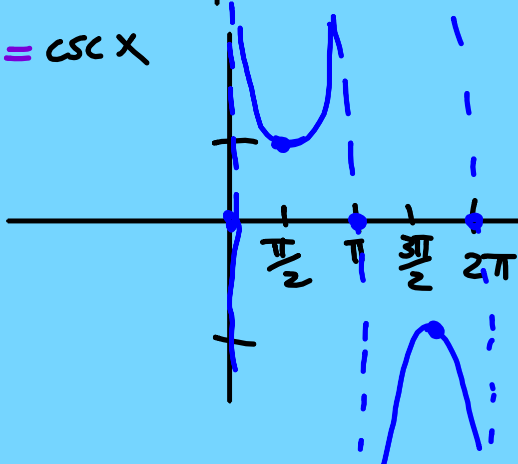
y = sin x



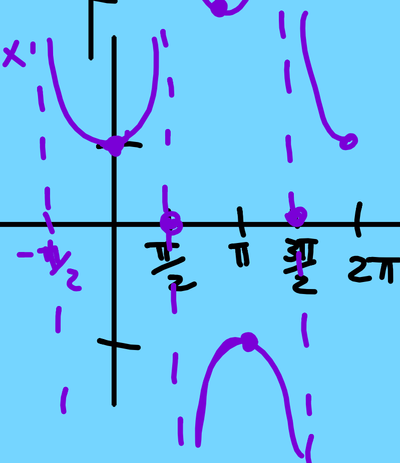
y = cos x



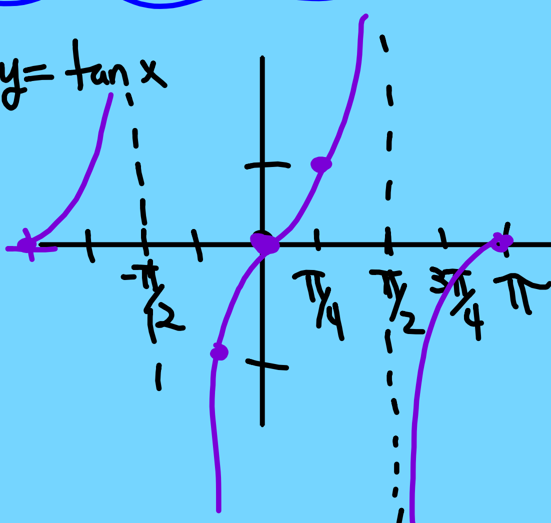
y = csc x



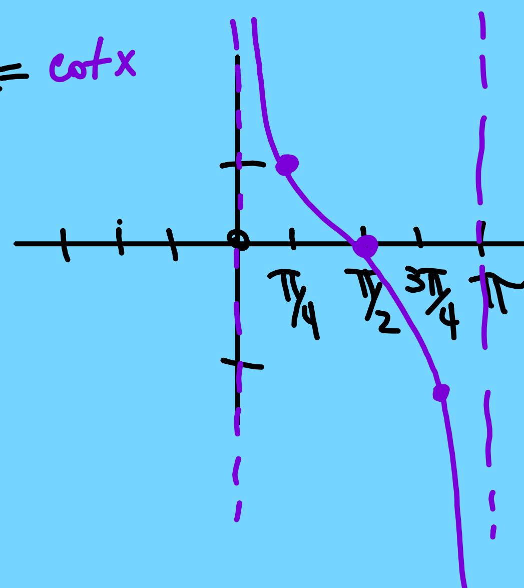
y = sec x



y = tan x



y = cot x



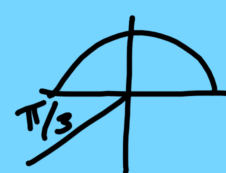
$y = a\_\_\_(bx+c)+d$

	sin, cos	sec, csc	tan, cot
amp	$\|a\|$	NA	NA
period	$\frac{2\pi}{b}$	$\frac{2\pi}{b}$	$\frac{\pi}{b}$
p.s.	$bx+c=0$, $x=-c/b$	$bx+c=0$, $x=-c/b$	$bx+c=0$, $x=-c/b$
V.S.	d	d	d

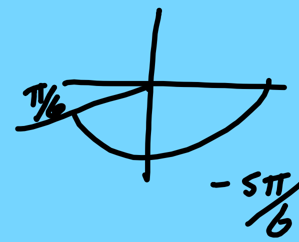
$y=(2x-7)^2+3$

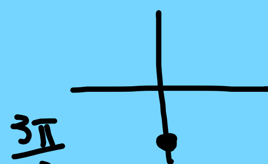
SPECIAL ANGLES

$$\frac{\cos\frac{4\pi}{3} - \cot^2\left(-\frac{5\pi}{6}\right)}{\sin\left(\frac{3\pi}{2}\right)\ \sec\left(\frac{15\pi}{4}\right)}$$

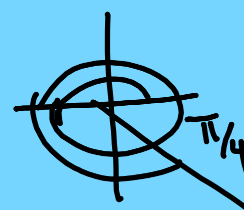


$\frac{4}{3} = 1\frac{1}{3}\pi$





$1\frac{1}{2}\pi$



$3\frac{3}{4}$

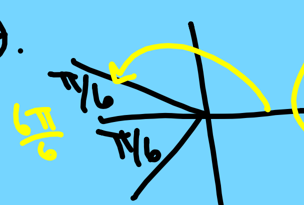
$\cos\pi/4 = \sqrt{2}/2$

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

$$\frac{-\frac{1}{2} - 3}{-\sqrt{2}} = \frac{^{+}\frac{7}{2}}{\frac{+\sqrt{2}}{1}} = \frac{7}{2} \cdot \frac{1}{\sqrt{2}} = \frac{7\sqrt{2}}{2\sqrt{2} \cdot \sqrt{2}} = \frac{7\sqrt{2}}{4}$$

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

Find θ.



$\frac{5\pi}{6}, \frac{7\pi}{6}$

$\sin\theta = \frac{y}{r}$ $\csc\theta = \frac{r}{y}$

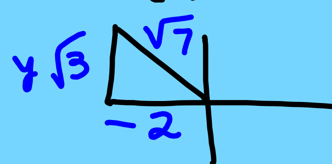
$\cos\theta = \frac{x}{r}$ $\sec\theta = \frac{r}{x}$

$\tan\theta = \frac{y}{x}$ $\cot\theta = \frac{x}{y}$

Find $\cot\theta$

given $\sec\theta = -\frac{\sqrt{7}}{2}$ $\frac{r}{x}$

$\sin\theta > 0$. (+)



$y^2 + 4 = 7$

$\sqrt{y^2} = \pm\sqrt{3}$

$\cot\theta = \frac{x}{y} = \frac{-2\sqrt{3}}{\sqrt{3}\cdot\sqrt{3}}$

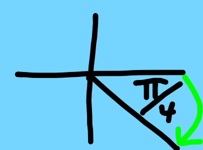
$= -\frac{2\sqrt{3}}{3}$

August 23, 2024

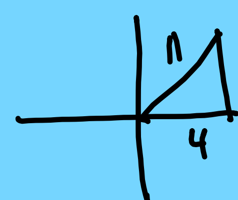
Inverse Trig Functions

− { $\cos^{-1}x$, $\sec^{-1}x$, $\cot^{-1}x$ }	{ All } +
	{ $\csc^{-1}x$, $\sin^{-1}x$, $\tan^{-1}x$ } −

$$\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right) = -\frac{\pi}{4}$$



$$\csc\left(\sec^{-1}\frac{11}{4}\right) \quad \frac{r}{x}$$



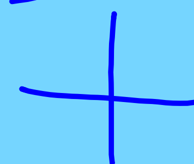
$y = \sqrt{105}$

$$16 + y^2 = 121$$
$$\sqrt{y^2} = \sqrt{105}$$
$$y = \pm\sqrt{105}$$

$$\csc\theta = \frac{r}{y} = \frac{11}{\sqrt{105}} = \frac{11\sqrt{105}}{105}$$

If $\tan A = \frac{7}{3}$ & $\csc B = -3$ $\quad \pi < A < \frac{3\pi}{2}$

find $\cos(A - B)$ $\quad \frac{3\pi}{2} < B < 2\pi$



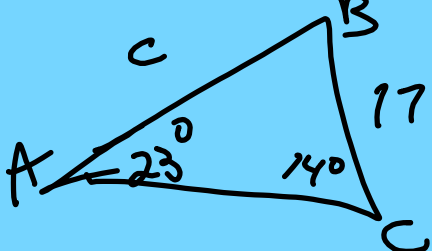
$= \cos A \cos B + \sin A \sin B$

$(\quad)(\quad) + (\quad)(\quad)$

Law of Sines

ASA
AAS
SSA*

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



Law of Cosines

SAS
SSS

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