Mathematics 10D

Reciprocal Trig Functions:

CSC COT SEC

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$\sin\theta$
SOH

$\cos\theta$
CAH

$\tan\theta$
TOA

*primary

$\csc\theta = \frac{1}{\sin\theta}$

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

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

$\csc\theta = \frac{1}{\frac{opp}{hyp}}$

$= 1 \div \frac{opp}{hyp}$

$= 1 \times \frac{hyp}{opp}$

$\sec\theta = \frac{1}{\frac{adj}{hyp}}$

$= 1 \div \frac{adj}{hyp}$

$= 1 \times \frac{hyp}{adj}$

$\cot\theta = \frac{1}{\frac{opp}{adj}}$

$= 1 \div \frac{opp}{adj}$

$= 1 \times \frac{adj}{opp}$

$\csc\theta = \frac{hyp}{opp}$

$\sin\theta = \frac{opp}{hyp}$

$\sec\theta = \frac{hyp}{adj}$

$\cos\theta = \frac{adj}{hyp}$

$\cot\theta = \frac{adj}{opp}$

$\tan\theta = \frac{opp}{adj}$

$$\csc t = \frac{1}{\sin t}$$

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

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

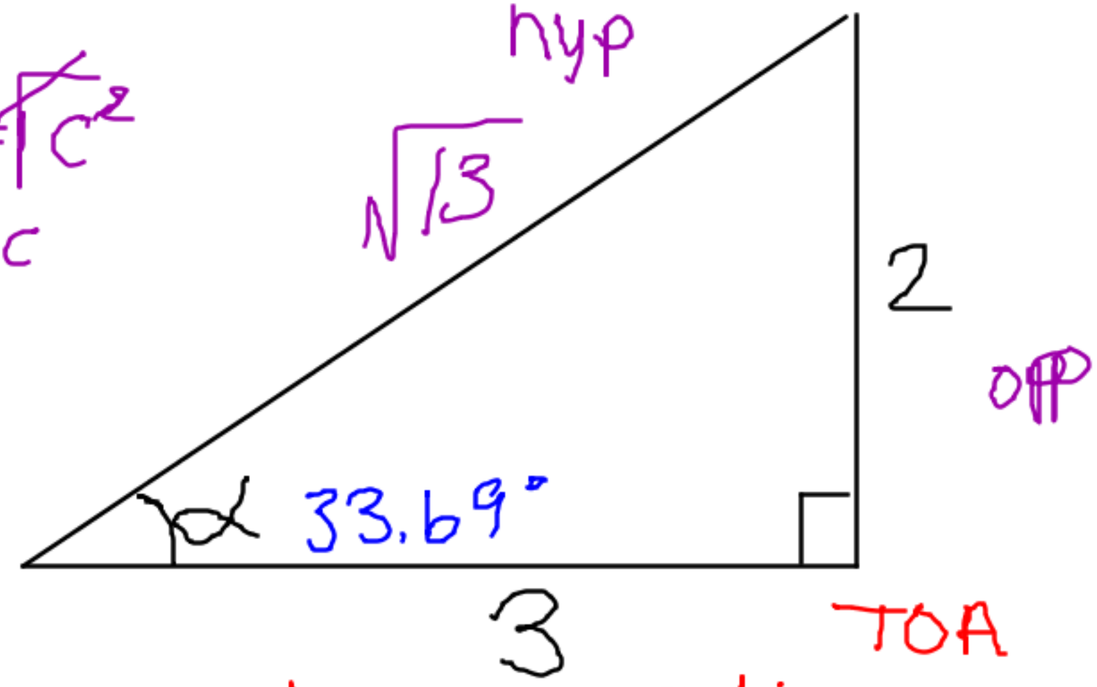
✓

* not on your calculator

Pythagorean Thm: $3^2+2^2=c^2$

$9+4=\sqrt{13}=\sqrt{c^2}$

$\sqrt{13}=c$



$\csc\alpha = \frac{1}{\sin\alpha}$ SOH

$\frac{1}{\sin\alpha} = \frac{1}{\frac{opp}{hyp}} = \frac{hyp}{opp}$

$\left(\frac{1}{\sin\alpha}\right) = \left(\frac{\sqrt{13}}{2}\right)\sin\alpha$

$\frac{2}{\sqrt{13}}\left(\frac{1}{\sin\alpha}\right) = \left(\frac{\sqrt{13}}{2}(\sin\alpha)\right)\frac{2}{\sqrt{13}}$

$\sin^{-1}\left(\frac{2}{\sqrt{13}}\right) = \sin^{-1}(\sin\alpha)$

$\sin^{-1}\left(\frac{2}{\sqrt{13}}\right) = \alpha$

$35.69^\circ \approx \alpha$

$\cot\alpha = \frac{1}{\tan\alpha} = \frac{adj}{opp}$

$\frac{\sqrt{13}}{3}\left(\tan\alpha\left(\frac{1}{\tan\alpha}\right)\right) = \left(\frac{3}{\sqrt{13}}\tan\alpha\right)\frac{\sqrt{13}}{3}$

$\tan^{-1}\left(\frac{\sqrt{13}}{3}\right) = \tan^{-1}(\tan\alpha)$

$33.69^\circ = \alpha$