

4-14-14
3rd Trig

Review of ch. 9 concepts
Change between radian
and degrees.

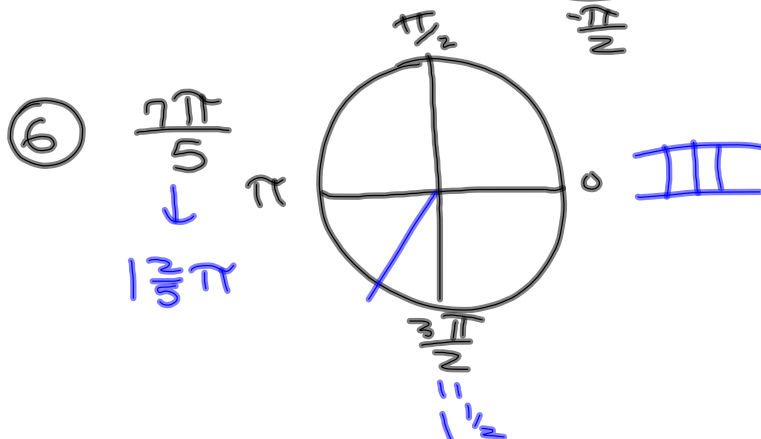
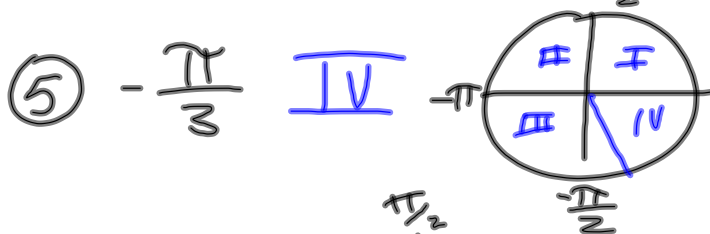
$$\textcircled{1} 40^\circ \cdot \frac{\pi}{180^\circ} = \frac{40\pi}{180} = \frac{2\pi}{9}$$

$$\textcircled{2} 100^\circ \cdot \frac{\pi}{180^\circ} = \frac{100\pi}{180} = \frac{5\pi}{9}$$

$$\textcircled{3} \frac{\pi}{7} \cdot \frac{180^\circ}{\pi} = \frac{180^\circ}{7} \approx 26^\circ$$

$$\textcircled{4} 8\pi \cdot \frac{180^\circ}{\pi} = 1440^\circ$$

In which quadrant are these?



Coterminal angles

Pointing in same direction

$$\textcircled{1} \quad 10^\circ \rightarrow -350^\circ \quad 370^\circ$$

$$\textcircled{2} \quad \frac{\pi}{3} \rightarrow \frac{7\pi}{3} \quad -\frac{5\pi}{3}$$

$$\pm 2\pi$$

$$\frac{\pi}{3} \pm \frac{6\pi}{3}$$

$$\textcircled{3} \quad \frac{2\pi}{5} \quad \frac{12\pi}{5} \quad -\frac{8\pi}{5}$$

$$\pm 2\pi$$

$$\frac{2\pi}{5} \pm \frac{10\pi}{5}$$

Tell if the following are coterminal.

$$\textcircled{1} \quad 50^\circ \text{ and } 910^\circ$$

is it a multiple of 360°

$$\frac{910}{360} = 2.5\dots$$

No

$$\textcircled{2} \quad \frac{\pi}{3} \quad \frac{7\pi}{3} \quad \frac{7\pi}{3} - \frac{\pi}{3} = \frac{6\pi}{3} = 2\pi$$

Yes

$$\textcircled{3} \quad \frac{11\pi}{5} \quad \frac{212\pi}{5}$$

Differ by

$$\frac{201\pi}{5} = 40.2\pi$$

No

Reciprocals

$$\cos \theta \rightarrow \sec \theta$$

$$\sin \theta \rightarrow \csc \theta$$

$$\tan \theta \rightarrow \cot \theta$$

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

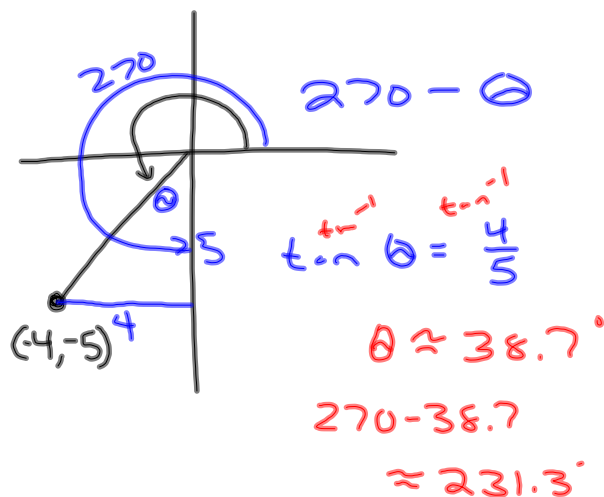
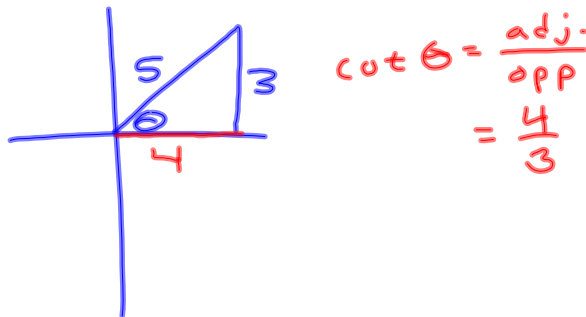
$$\csc \theta = \frac{\text{hyp.}}{\text{opp.}}$$

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

If $\sin \theta = \frac{3}{5}$, what is $\csc \theta$?

Σ
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Σ

If $\sin \theta = \frac{3}{5}$ ^{opp.} _{hyp.}, what is $\cot \theta$?



4-14-14
4th Trig

Review of ch. 9 concepts

Change between radian
and degrees.

$$\textcircled{1} 50^\circ \cdot \frac{\pi}{180^\circ} = \frac{50\pi}{180} = \frac{5\pi}{18}$$

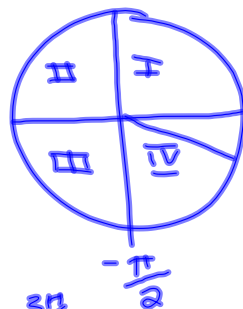
$$\textcircled{2} 10^\circ \cdot \frac{\pi}{180} = \frac{10\pi}{180} = \frac{\pi}{18}$$

$$\textcircled{3} \frac{\pi}{5} \cdot \frac{180^\circ}{\pi} = \frac{180}{5} = 36^\circ$$

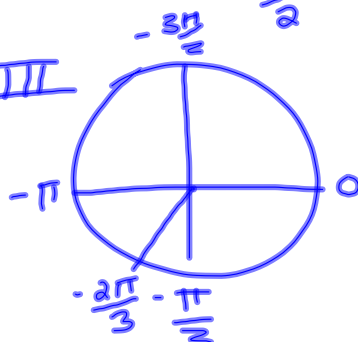
$$\textcircled{4} \frac{2\pi}{9} \cdot \frac{180^\circ}{\pi} = 40^\circ$$

In which quadrant is :

$$\textcircled{1} -\frac{\pi}{6} \quad \text{IV}$$



$$\textcircled{2} -\frac{2\pi}{3} \quad \text{III}$$



Coterminal facing same direction

$$\textcircled{1} 10^\circ \rightarrow -350^\circ \quad 370^\circ$$

$\pm 360^\circ$

$$\textcircled{2} \frac{\pi}{4} \quad \frac{9\pi}{4} \quad -\frac{7\pi}{4}$$

$\pm 2\pi$

$$\frac{\pi}{4} \pm \frac{8\pi}{4}$$

$$\textcircled{3} \frac{2\pi}{7} \quad \frac{16\pi}{7} \quad -\frac{12\pi}{7}$$

$\pm 2\pi$

$$\frac{2\pi}{7} \pm \frac{14\pi}{7}$$

Are these coterminal?

$$\textcircled{1} -440^\circ \text{ and } 260^\circ$$

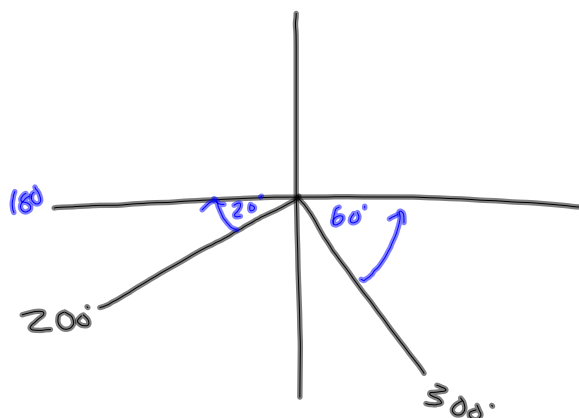
Differ by $\frac{700^\circ}{360} \approx 1.9\ldots$

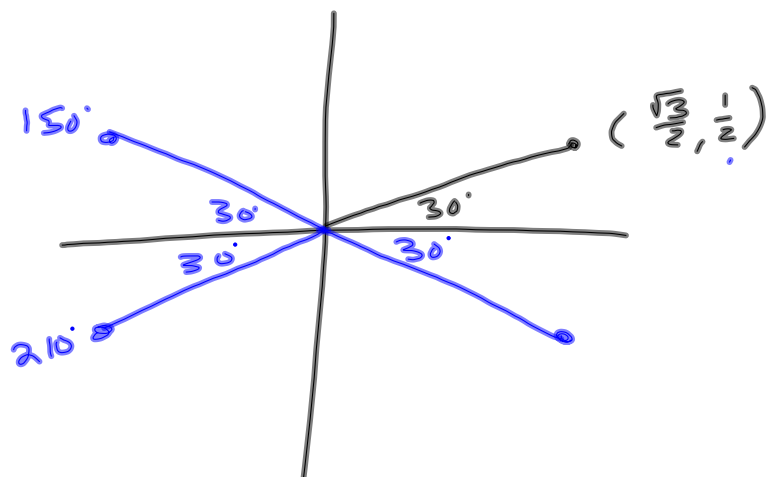
No

$$\textcircled{2} \frac{3\pi}{5} \text{ and } \frac{13\pi}{5}$$

$$\frac{10\pi}{5} = 2\pi \quad \text{Yes}$$

Reference Angle
(get back to closest x-axis)





Reciprocals

$$\cos \theta \rightarrow \sec \theta$$

$$\sin \theta \rightarrow \csc \theta$$

$$\tan \theta \rightarrow \cot \theta$$

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

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

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

If $\sin \theta = \frac{3}{5}$, what is $\cot \theta$?

