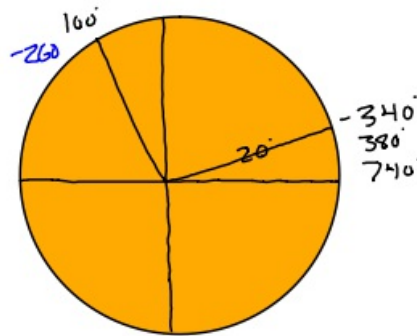


2-26-18 1st Trig

Coterminal



① Are 220° and 2340° coterminal?

$$\begin{aligned} & \text{2120 difference} \\ & \frac{2120}{360} \\ & = 5.8\bar{3} \quad \text{NO} \end{aligned}$$

② Are -110° and 3490° coterminal?

$$\begin{aligned} \text{Difference} & \rightarrow \frac{3600}{360} = 10 \\ & \text{Yes} \end{aligned}$$

If in radians, they must vary by a multiple of 2π .

③ Are $\frac{\pi}{6}$ and $\frac{19\pi}{6}$ coterminal?

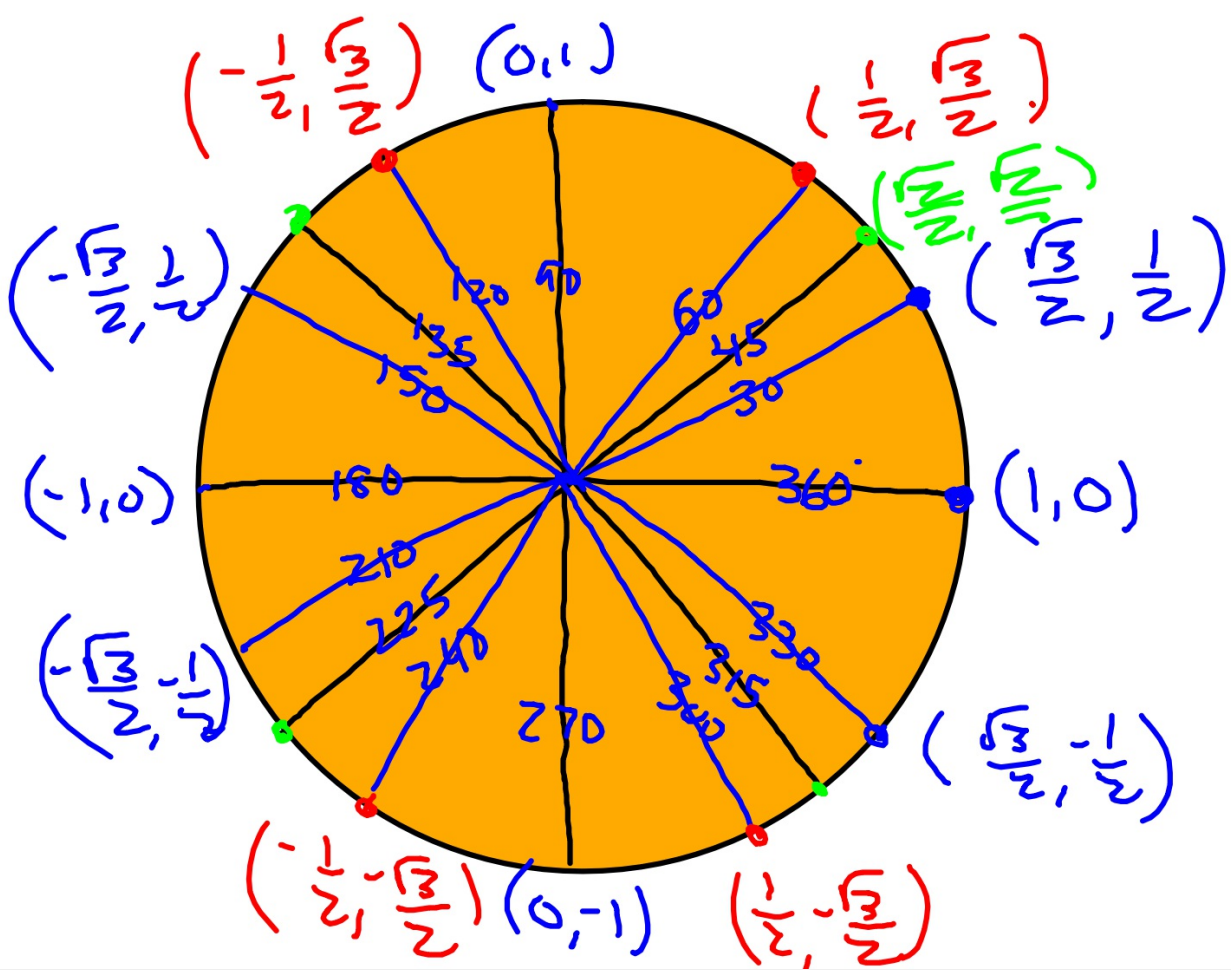
$$\begin{aligned} \text{Difference} & \frac{19\pi}{6} - \frac{\pi}{6} = \frac{18\pi}{6} = 3\pi \\ & \text{NO} \end{aligned}$$

④ Give me 3 radian measurements that are coterminal to $\frac{\pi}{5}$.

$$\frac{\pi}{5} + 2\pi = \frac{\pi}{5} + \frac{10\pi}{5} = \frac{11\pi}{5}$$

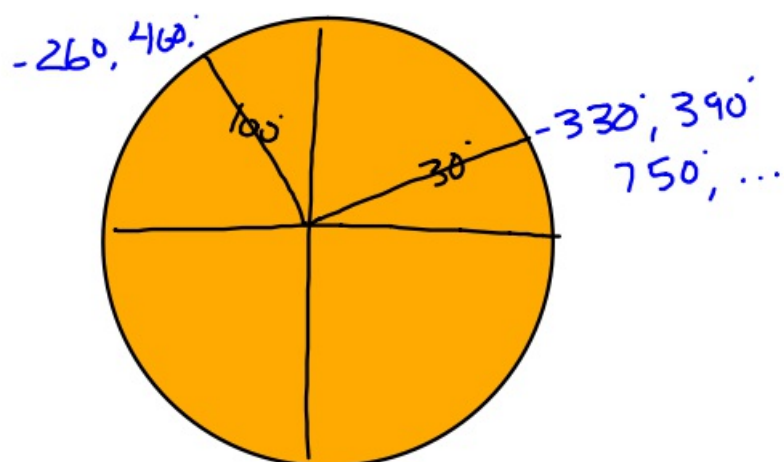
$$\frac{\pi}{5} + 4\pi = \frac{\pi}{5} + \frac{20\pi}{5} = \frac{21\pi}{5}$$

$$\frac{\pi}{5} - 2\pi = \frac{\pi}{5} - \frac{10\pi}{5} = \frac{-9\pi}{5}$$



2-26-18 3rd Trig

Coterminal Angles



① Are 140° and 2260° coterminal?

$$\text{Difference } 2260 - 140 = \frac{2120}{360}$$

$$\text{No} = 5.\bar{8}$$

② Are 20° and 7220° coterminal?

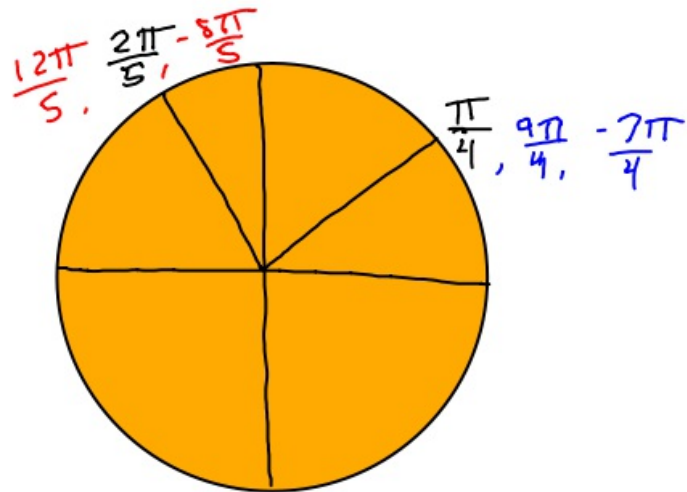
$$\text{Difference } 7220 - 20 = \frac{7200}{360}$$

$$\text{Yes} = 20$$

③ Are $\frac{\pi}{5}$ and $\frac{21\pi}{5}$ coterminal?

$$\text{Difference } \frac{21\pi}{5} - \frac{\pi}{5} = \frac{20\pi}{5} = 4\pi$$

Since 4π is a multiple of 2π , then the answer is Yes.

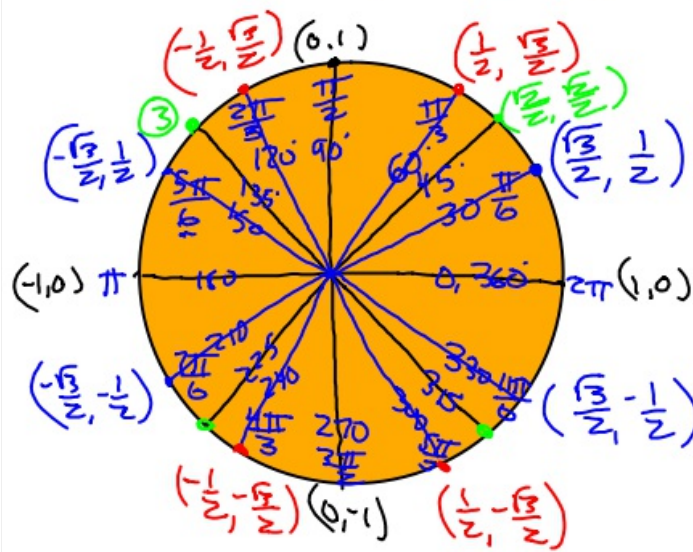


$$\frac{\pi}{4} + \frac{2\pi}{1} = \frac{\pi}{4} + \frac{8\pi}{4} = \frac{9\pi}{4}$$

$$\frac{\pi}{4} - \frac{2\pi}{1} = \frac{\pi}{4} - \frac{8\pi}{4} = -\frac{7\pi}{4}$$

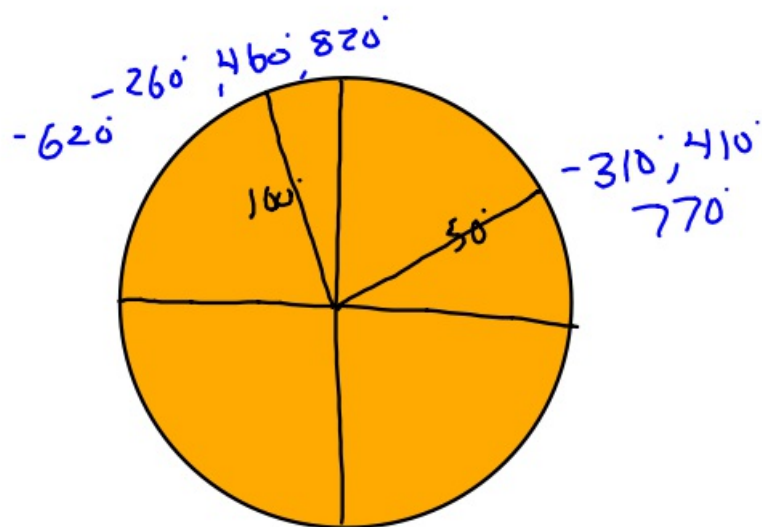
$$\frac{2\pi}{5} + \frac{2\pi}{1} = \frac{2\pi}{5} + \frac{10\pi}{5} = \frac{12\pi}{5}$$

$$\frac{2\pi}{5} - \frac{2\pi}{1} = \frac{2\pi}{5} - \frac{10\pi}{5} = -\frac{8\pi}{5}$$



2-26-18 4th Trig

Coterminal



① Are 70° and $2,140$ coterminal?

$$\text{Difference } 2,140 - 70 = \frac{2070}{360}$$

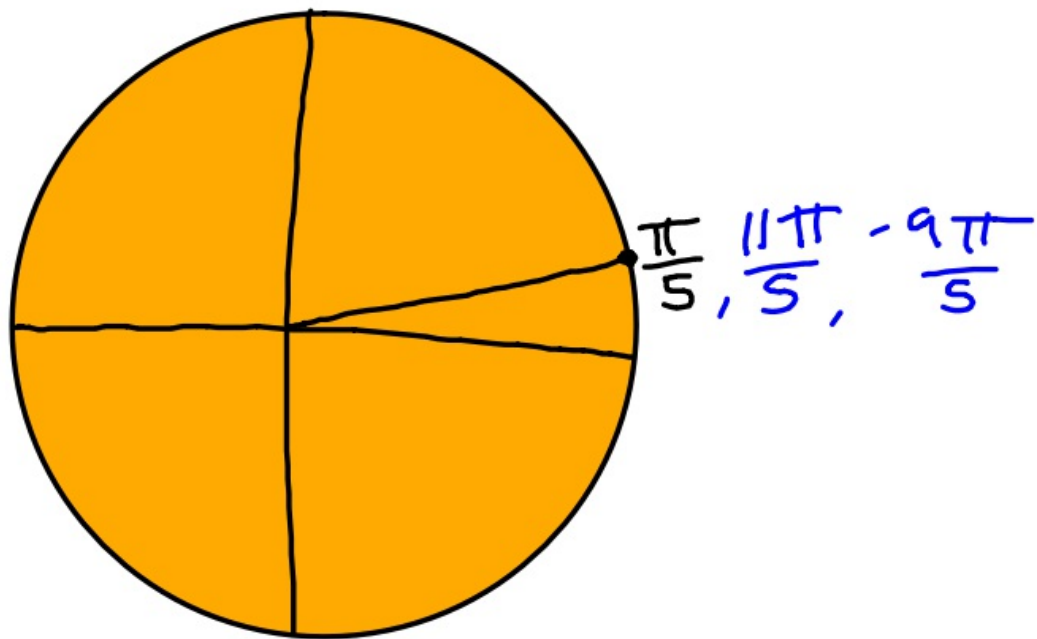
5.75

NO

② Are 80° and 7280 coterminal?

$$\text{Difference } 7280 - 80 = \frac{7200}{360}$$

Yes = 20



$$\frac{\pi}{5} + \frac{2\pi}{1} = \frac{\pi}{5} + \frac{10\pi}{5} = \frac{11\pi}{5}$$

$$\frac{\pi}{5} - \frac{2\pi}{1} = \frac{\pi}{5} - \frac{10\pi}{5} = -\frac{9\pi}{5}$$

③ Are $\frac{3\pi}{7}$ and $\frac{31\pi}{7}$ coterminal?

$$\frac{31\pi}{7} - \frac{3\pi}{7} = \frac{28\pi}{7} = 4\pi$$

Yes

