

In which quadrant is

① $\frac{3\pi}{5}$ ($.60\pi$) II

② $\frac{7\pi}{5}$ (1.40π) III

③ $\frac{15\pi}{7}$ (2.142857π) I

Give me 3 angles that are coterminal to 70° .

$+360$ or -360

$430, 790, -290, -650$

Give me 3 angles that are coterminal to $\frac{\pi}{4}$.

$+2\pi$ -2π

$+\frac{8\pi}{4}$ $-\frac{8\pi}{4}$

$\frac{\pi}{4} + \frac{8\pi}{4} = \frac{9\pi}{4}$ $\frac{17\pi}{4}$

$\frac{\pi}{4} - \frac{8\pi}{4} = \frac{-7\pi}{4}$ $\frac{-15\pi}{4}$

Give 3 angles that are coterminal of $\frac{2\pi}{7}$

$$+ 2\pi \quad - 2\pi$$

$$\frac{14\pi}{7} \quad - \frac{14\pi}{7}$$

$$\frac{2\pi}{7} + \frac{14\pi}{7} = \frac{16\pi}{7} \quad \frac{30\pi}{7} \quad \frac{44\pi}{7}$$

$$\frac{2\pi}{7} - \frac{14\pi}{7} = -\frac{12\pi}{7} \quad -\frac{26\pi}{7} \quad -\frac{40\pi}{7}$$

Are 420° and 2840° coterminal?

$$2840^\circ - 420^\circ = \frac{2420^\circ}{360^\circ} = 6.7$$

Are -210° and 1450° coterminal?

$$1450 - -210$$

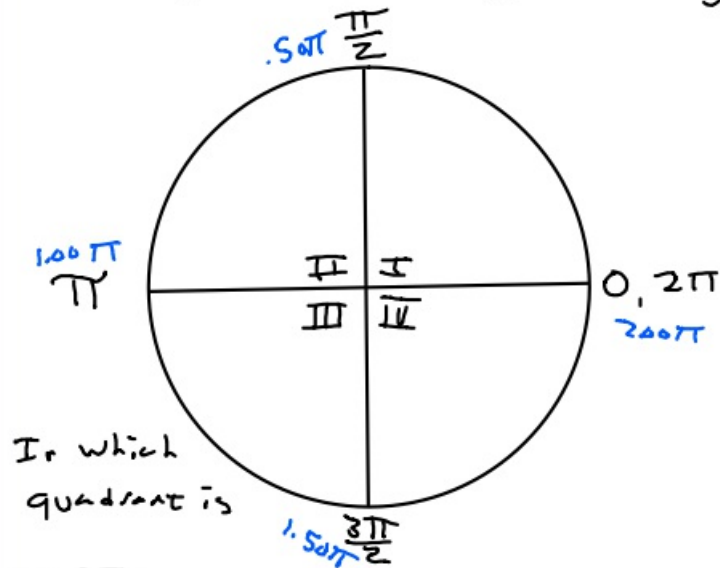
$$\frac{1660^\circ}{360} = 4.6\dots$$

Are $\frac{\pi}{5}$ and $\frac{11\pi}{5}$ coterminal?

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

Yes

3-2-20 3rd Trig



① $\frac{7\pi}{5}$ (1.40π) III

② $-\frac{2\pi}{3}$ (-.66π) III

③ $\frac{9\pi}{4}$ (2.25π) I

④ Give me 3 angles that are coterminal to -50° .

+360 -360

310° -410°

670° -770°

⑤ Give me 3 angles that are coterminal to $\frac{\pi}{5}$.

+2π -2π

+ $\frac{10\pi}{5}$ - $\frac{10\pi}{5}$

$\frac{\pi}{5} + \frac{10\pi}{5} = \frac{11\pi}{5}$ + $\frac{10\pi}{5} = \frac{21\pi}{5}$

$\frac{\pi}{5} - \frac{10\pi}{5} = -\frac{9\pi}{5}$ - $\frac{10\pi}{5} = -\frac{19\pi}{5}$

⑥ Give 3 angles coterminal to $\frac{2\pi}{7}$

$$+ 2\pi \left(\frac{14\pi}{7} \right)$$

$$\frac{2\pi}{7} + \frac{14\pi}{7} = \boxed{\frac{16\pi}{7}} + \frac{14\pi}{7} = \boxed{\frac{30\pi}{7}}$$

$$\frac{2\pi}{7} - \frac{14\pi}{7} = \boxed{\frac{-12\pi}{7}}$$

⑦ Are 40° and 1840° coterminal?

Differ by some multiple of 360° .

$$1840 - 40^\circ = \frac{1800^\circ}{360} = 5.0$$

went 5 rotations. \therefore **Yes**

⑧ Are $\frac{2\pi}{5}$ and $\frac{42\pi}{5}$ coterminal?

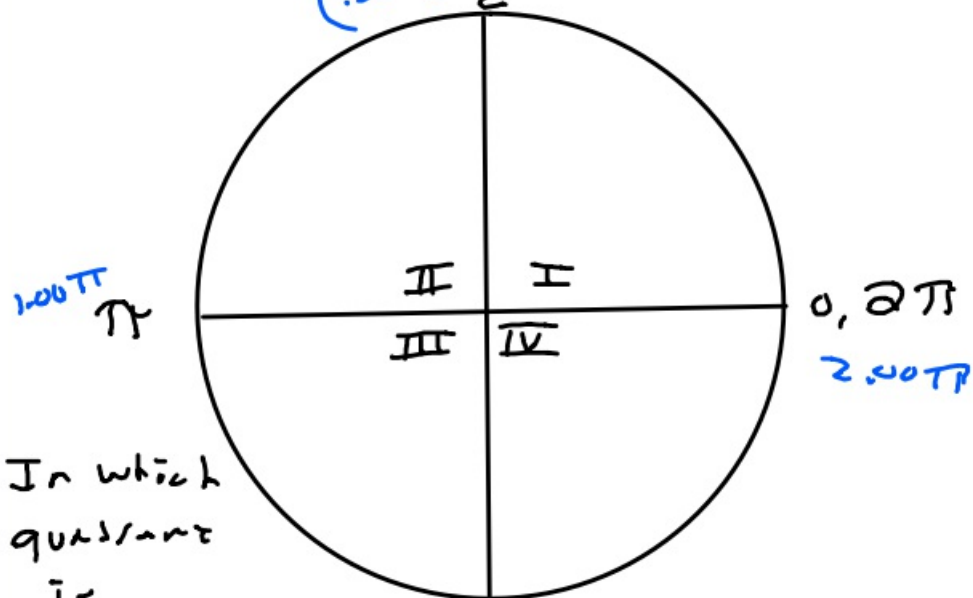
$$\frac{42\pi}{5} - \frac{2\pi}{5} = \frac{40\pi}{5} = \frac{8\pi}{2\pi} = 4$$

4 rotations around.

\therefore **Yes**

3-2-20 4th Trig

$$(.50\pi) \frac{\pi}{2}$$



In which quadrant is

① $\frac{3\pi}{7}$ $(.428571\pi)$ I

② $\frac{7\pi}{5} = (1.40\pi)$ III

③ $\frac{11\pi}{5}$ (2.20π) I

④ Give me 3 angles that are coterminal to 70° .
 ± 360 ($\times 2$ $\times 3$ $\pm 720 \pm 1080$)

$$70 + 360 = 430^\circ$$

$$+ 720 = 790^\circ$$

$$70 - 360 = -290^\circ$$

⑤ Give 3 angles that are coterminal to $\frac{\pi}{5}$.

$$+2\pi \quad -2\pi$$

$$\frac{10\pi}{5} \quad -\frac{10\pi}{5}$$

$$\frac{\pi}{5} + \frac{10\pi}{5} = \boxed{\frac{11\pi}{5}} + \frac{10\pi}{5} = \boxed{\frac{21\pi}{5}}$$

$$\frac{\pi}{5} - \frac{10\pi}{5} = \boxed{-\frac{9\pi}{5}} - \frac{10\pi}{5} = \boxed{-\frac{19\pi}{5}}$$

⑥ Are 70° and 2450° coterminal?

Do they differ by a multiple of 360° ?

$$2450 - 70 = \frac{2380}{360} = 6.6$$

No

⑦ Are $\frac{2\pi}{3}$ and $\frac{15\pi}{3}$ coterminal?

$$\frac{15\pi}{3} - \frac{2\pi}{3} = \frac{13\pi}{3} = 4\frac{1}{3}\pi$$