SOLUTIONS

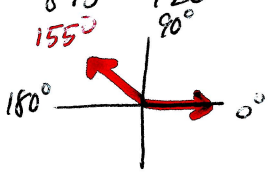
Practice #22 Alg 2 Monday & Tuesday April 27/28, 2020

1. State in which Quadrant is the terminal side of each angle in Standard Position.

a) $\theta = 875°$

1ST COTERMINAL Between $0°$ & $360°$

$875° - 720° = 155°$

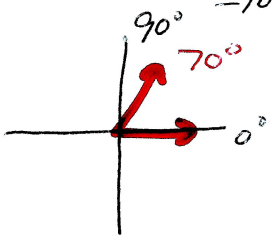


QUADRANT II

b) $\theta = -1010°$

1ST COTERMINAL Between $0°$ & $360°$

$-1010° + 1080° = 70°$

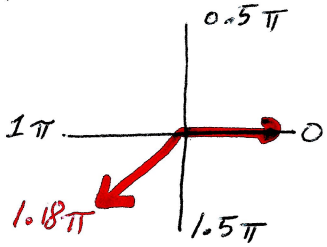


Quadrant I

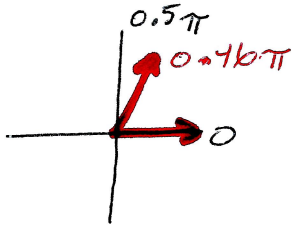
c) $\theta = \frac{20\pi}{17}$ 1ST COTERMINAL BETWEEN 0 & 2π

$\frac{20\pi}{17} = 1.18\pi$

Quadrant III

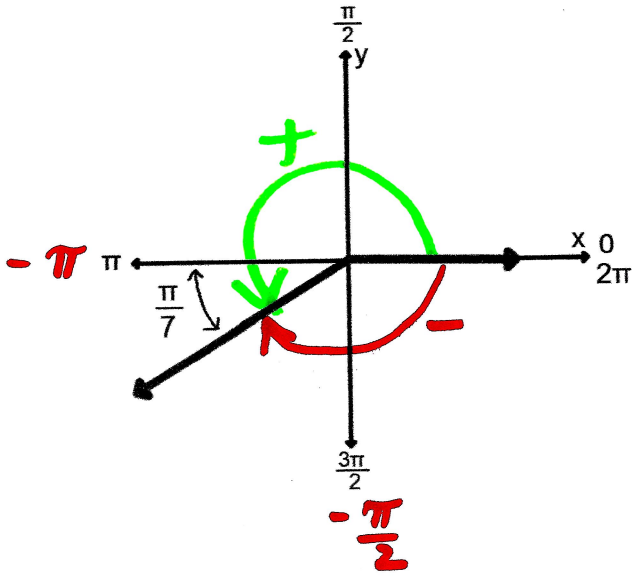


d) $\theta = \frac{39\pi}{85}$ $\frac{39\pi}{85} = 0.46\pi$



Quadrant I

2. Give both a Positive and a Negative measure of this angle, in radians, which is in Standard Position.



Pos: $\frac{\pi}{7}$ past π

$\theta = \pi + \frac{\pi}{7}$

$= \frac{7\pi}{7} + \frac{\pi}{7}$

$\theta = \frac{8\pi}{7}$

Neg:

$\frac{\pi}{7}$ short of π in a neg direction

$\theta = -\left(\pi - \frac{\pi}{7}\right)$

$= -\left(\frac{7\pi}{7} - \frac{\pi}{7}\right)$

$\theta = -\frac{6\pi}{7}$

3. Find a coterminal angle, in radians, whose measure is from 0 to 2π ($0 < \theta < 2\pi$).

a) $\theta = \frac{19\pi}{5}$ $\Rightarrow$ $2\pi = \frac{10\pi}{5}$

Coterminal $\angle$ = $\frac{9\pi}{5}$

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

since $\frac{9}{5} < 2$

$\frac{9\pi}{5} < 2\pi$

b) $\theta = \frac{-26\pi}{9}$ $\Rightarrow$ $2\pi = \frac{18\pi}{9}$

Coterminal $\angle$ = $10\pi/9$

$-\frac{26\pi}{9} + \frac{18\pi}{9} = -\frac{8\pi}{9}$ still neg so add 2π again

$-\frac{8\pi}{9} + \frac{18\pi}{9} = \frac{10\pi}{9}$

$\frac{10}{9}$ is between 0 & 2

so $\frac{10\pi}{9}$ is between 0 & 2π