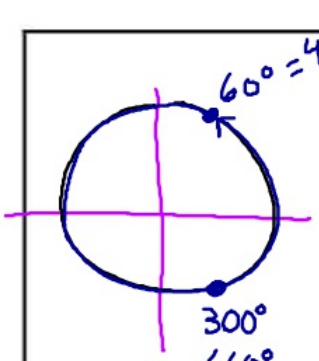



A) $\cos 2\theta = \frac{1}{2}$

Add 180°

When is cosine = $\frac{1}{2}$?

$2\theta = 60°$ $\quad$ $2\theta = 300$

$\theta = 30°$ $\quad$ $\theta = 150°$

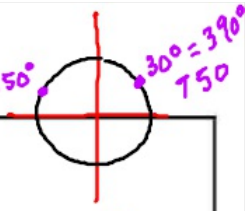
$2\theta = 420°$ $\quad$ $2\theta = 660°$

$\theta = 210°$ $\quad$ $\theta = 330°$

B) $\sin 3\theta = \frac{1}{2}$

870° = 510° = 150°

Add 120°




$3\theta = 30°$ $\quad$ $3\theta = 150°$

$\theta = 10°$ $\quad$ $\theta = 50°$

$3\theta = 390°$ $\quad$ $3\theta = 510°$

$\theta = 130°$ $\quad$ $\theta = 170°$

$3\theta = 750°$ $\quad$ $3\theta = 870°$

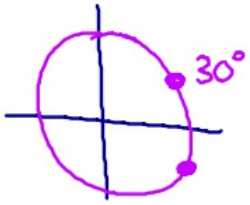
$\theta = 250°$ $\quad$ $\theta = 290°$

C) $\cos\frac{\theta}{3} = \frac{\sqrt{3}}{2}$

$\cos\theta = \frac{\sqrt{3}}{2}$

$\theta = 30°$

$\theta = 360 - 30° = 330°$

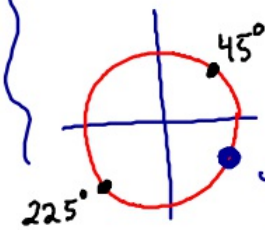



(3) $\frac{\theta}{3} = 30°$ (3) $\quad \frac{\theta}{3} = 330°$

$\theta = 90°$ $\quad$ $\theta = 990°$

D) $\tan\left(\frac{\theta}{2} + \frac{\pi}{3}\right) = 1$

When is tangent = 1




$\frac{\theta}{2} + 60° = 45°$

$-60° \quad -60°$

$\frac{\theta}{2} = -15$

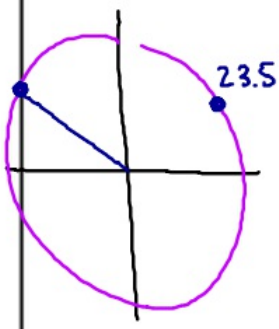
$\theta = -30°$

$\frac{\theta}{2} + 60° = 225°$

$-60° \quad -60°$

$\frac{\theta}{2} = 165$ $\quad$ $\theta = 330°$

E) $\sin\theta = .4$




$\sin\theta = .4$

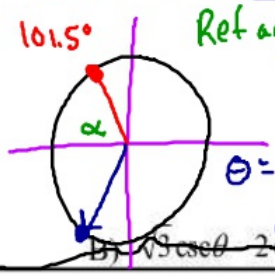
$\theta = \sin^{-1}(.4) = 23.5°$

$\theta = 180 - 23.5° = 156.5°$

F) $\cos\theta = -.2$

$\theta = \cos^{-1}(-.2) = 101.5°$

Ref angle = 180 − 101.5 = 78.5°




$\theta = 180 + 78.5$

$\theta = 258.5$

~~A) $\sqrt{2}\cos\theta + 1 = 0$~~ $\quad$ ~~B) $\sqrt{3}\csc\theta - 2 = 0$~~

$\cos 4\theta = \frac{\sqrt{2}}{2}$

$4\theta = 45^\circ$ $\quad$ $4\theta = 315^\circ$

$\theta = 11.25$ $\quad$ $\theta = 78.75^\circ$

$\theta = 101.25$ $\quad$ $\theta = 168.75$

$\theta = 191.25$ $\quad$ $\theta = 258.75$

$\theta = 281.25$ $\quad$ $\theta = 348.75$

Once you have your 1st two angles - Solve for $\theta$

$2\theta \rightarrow$ Add $180^\circ$

$3\theta \rightarrow$ Add $120^\circ$

$4\theta \rightarrow$ Add $90^\circ$

$n\theta \rightarrow$ Add $\frac{360}{n}$

1. Find the 1st two angles from your circle
2. Solve for $\theta$
3. Add $\frac{360}{n}$