$\cos(2\theta) = -\frac{1}{2}$

$2\theta = \cos^{-1}(-\frac{1}{2})$

$\frac{2\theta}{2} = \frac{2\pi}{3} + 2\pi n$

$= \frac{4\pi}{3} + 2\pi n$

$\theta = \frac{\pi}{3} + \pi n$, $\frac{2\pi}{3} + \pi n$, $n \in \mathbb{Z}$

-2π, $\frac{\pi}{3}$, $\frac{4\pi}{3}$, 2π

$-\pi$, $\frac{2\pi}{3}$, $\frac{5\pi}{3}$, 3π

$[0, 2\pi)$

$\rightarrow 4\sin(3\theta) + 3\sqrt{3} = \sqrt{3}$

$\rightarrow 4\sin(3\theta) = -2\sqrt{3}$

$\sin(3\theta) = -\frac{\sqrt{3}}{2}$

$\sin(u) = -\frac{\sqrt{3}}{2}$

$u = \frac{4\pi}{3} + 2\pi n$

$= \frac{5\pi}{3} + 2\pi n$

$3\theta = \frac{4\pi}{3} + 2\pi n$

$= \frac{5\pi}{3} + 2\pi n$

$\theta \in [0, 2\pi]$

-2π, $\frac{4\pi}{9}$, $\frac{10\pi}{9}$, $\frac{16\pi}{9}$, 2π

$-\pi$, $\frac{2\pi}{9}$, $\frac{11\pi}{9}$, $\frac{17\pi}{9}$, $\frac{23\pi}{9}$

$\theta = \frac{4\pi}{9} + \frac{2\pi}{3} n$, $n \in \mathbb{Z}$

$= \frac{5\pi}{9} + \frac{2\pi}{3} n$

$\frac{4\pi}{9}, \frac{2\pi}{3}\cdot\frac{3}{3} = \frac{4\pi}{6} + \frac{6\pi}{9}$

$5\tan(\frac{\theta}{2}) + 6 = 11$

$\tan(\frac{\theta}{2}) = 1$

$\tan(u) = 1$

$u = \frac{\pi}{4} + 2\pi n$, $\frac{5\pi}{4} + 2\pi n$ $\Big\} \frac{\pi}{4} + \pi n$

$[0, 2\pi)$

-2π, $\frac{\pi}{4}$, $\frac{5\pi}{4}$

$\frac{\theta}{2} = (\frac{\pi}{4} + \pi n)2$

$\theta = \frac{\pi}{2} + 2\pi n$, $n \in \mathbb{Z}$

$\cos(2\theta) = -\frac{1}{2}$

$2\theta = \cos^{-1}\left(\frac{1}{2}\right)$

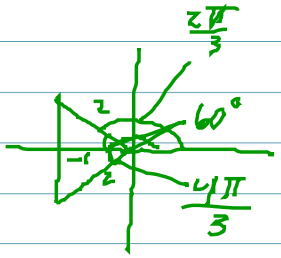
$\frac{2\theta}{2} = \frac{\frac{2\pi}{3} + 2\pi n}{2}$

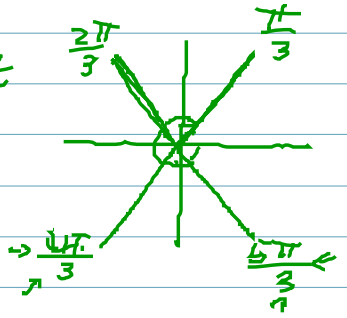
$= \frac{\frac{4\pi}{3} + 2\pi n}{2}$

$\theta = \frac{\pi}{3} + \pi n$, $n \in \mathbb{Z}$

$\frac{2\pi}{3} + \pi n$

$\frac{3\pi}{3}$





$-\frac{2\pi}{3}$, $\frac{\pi}{3}$, $\frac{4\pi}{3}$, $\frac{2\pi}{3}$

$-\frac{\pi}{3}$, $\frac{2\pi}{3}$, $\frac{5\pi}{3}$, $\frac{8\pi}{3}$

$[0, 2\pi)$

$\frac{\pi}{3} + 2\pi n$

$\frac{2\pi}{3} + 2\pi n$

$4\sin(3\theta) + 3\sqrt{3} = \sqrt{3}$

$4\sin(3\theta) = -2\sqrt{3}$

$\sin(3\theta) = -\frac{\sqrt{3}}{2}$

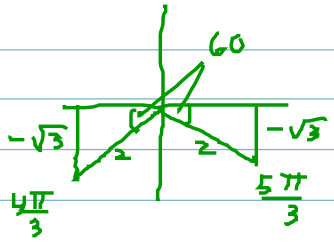
$\sin(u) = -\frac{\sqrt{3}}{2}$

$u = \frac{4\pi}{3} + 2\pi n$

$= \frac{5\pi}{3} + 2\pi n$

$3\theta = \frac{4\pi}{3} + 2\pi n$

$= \frac{5\pi}{3} + 2\pi n$



$\theta \in [0, 2\pi)$

$\theta = \frac{4\pi}{9} + \frac{2\pi}{3}n$, $n \in \mathbb{Z}$

$= \frac{5\pi}{9} + \frac{2\pi}{3}n$

$\frac{4\pi}{9}, \frac{2\pi}{3}\cdot\frac{3}{3} = \frac{4\pi}{9} + \frac{6\pi}{9}$

$-\frac{2\pi}{9}$, $\frac{4\pi}{9}$, $\frac{10\pi}{9}$, $\frac{16\pi}{9}$, $\frac{22\pi}{9}$

$-\frac{\pi}{9}$, $\frac{5\pi}{9}$, $\frac{11\pi}{9}$, $\frac{17\pi}{9}$, $\frac{23\pi}{9}$

$5\tan\left(\frac{\theta}{2}\right) + 6 = 11$

$\tan\left(\frac{\theta}{2}\right) = 1$

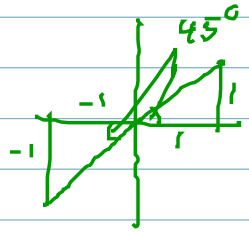
$\tan(u) = 1$

$u = \frac{\pi}{4} + 2\pi n$, $\frac{5\pi}{4} + 2\pi n$ $\Big\}$ $\frac{\pi}{4} + \pi n$

$[0, 2\pi)$

$2 \cdot \frac{\theta}{2} = \left(\frac{\pi}{4} + \pi n\right) 2$

$\theta = \frac{\pi}{2} + 2\pi n$, $n \in \mathbb{Z}$



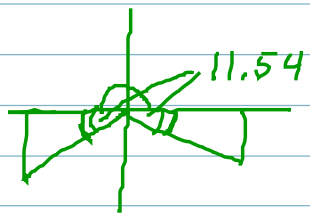
$-\frac{3\pi}{2}$, $\frac{\pi}{2}$, $\frac{5\pi}{2}$

$\sin(\theta) = -0,2$

$\theta = \sin^{-1}(-0,2)$

$= -11,54° + 360n \quad , n \in \mathbb{Z}$

$= 191,54° + 360n$



$[0°, 360°)$

$-11,54 \;,\; \boxed{\begin{matrix} 348,46° \\ 191,54° \end{matrix}}$

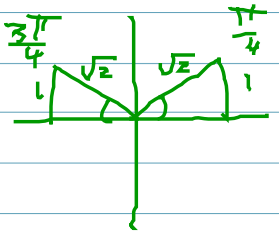
$\sin(\theta) = -0,2$

$\theta = -0,2014 + 2\pi n \quad , n \in \mathbb{Z}$

$= 3,3430 + 2\pi n$

$\sin(3\theta + \frac{\pi}{6}) = \frac{\sqrt{2}}{2}$

$\sin(u) = \frac{\sqrt{2}}{2} = \frac{1}{\sqrt{2}}$



$u = \frac{\pi}{4} + 2\pi n \quad (\downarrow) \quad = 3\theta + \frac{\pi}{6} \quad (\downarrow)$

$= \frac{3\pi}{4} + 2\pi n$

$\frac{3}{3}\frac{\pi}{4} - \frac{\pi}{6}\frac{2}{2} \rightarrow \frac{3\pi}{12} - \frac{2\pi}{12} = \frac{\pi}{12}$

$\frac{3}{3}\frac{3\pi}{4} - \frac{\pi}{6}\frac{2}{2} \rightarrow \frac{9\pi}{12} - \frac{2\pi}{12} = \frac{7\pi}{12}$

$3\theta = \frac{\pi}{12} + 2\pi n$

$= \frac{7\pi}{12} + 2\pi n$

$[0, 2\pi)$

$-\frac{23\pi}{36}, -\frac{17\pi}{36}, \frac{\pi}{36}, \frac{25\pi}{36}, \frac{49\pi}{36}, \frac{73\pi}{36}, \frac{7\pi}{36}, \frac{31\pi}{36}, \frac{55\pi}{36}, \frac{79\pi}{36}$

$\theta = \frac{\pi}{36} + \frac{2\pi}{3}n \quad , n \in \mathbb{Z}$

$= \frac{7\pi}{36} + \frac{2\pi}{3}n$

$\frac{24\pi}{36} \qquad 2\pi \rightarrow \frac{72\pi}{36}$