Find all the EXACT values of θ for $0 \le \theta \le 2\pi$ that makes this equation true.

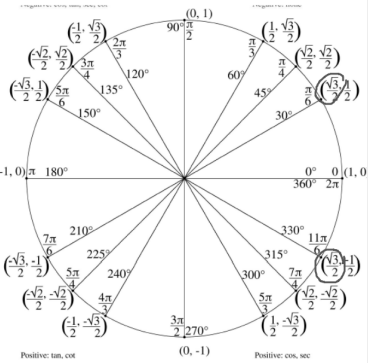
$$\text{Cos}2x = \frac{\sqrt{3}}{2}$$

period $= \frac{2\pi}{2} = \pi = \frac{12\pi}{12}$

$\frac{2x}{2} = \frac{\pi}{6} \div 2 \quad \& \quad \frac{11\pi}{6} \div 2$

$x = \frac{\pi}{12} \;\&\; \frac{11\pi}{12}$

$\frac{13\pi}{12} \quad \frac{23\pi}{12}$



keep adding a period to each answer until you reach 2π

Find all the EXACT values of θ for $0 \le \theta \le 2\pi$ that makes this equation true.

$$4(\text{Cos}4x)^2 + 7 = 8$$

period $\frac{2\pi}{4} = \frac{\pi}{2} = \frac{6\pi}{12}$

$\sqrt{\cos^2 4x} = \sqrt{1/4}$

$\cos 4x = \pm 1/2$

$4x = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

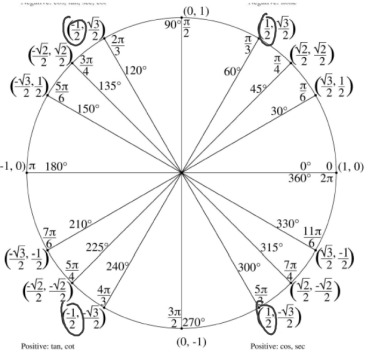
$\div 4$

$x = \frac{\pi}{12}, \frac{2\pi}{12}, \frac{4\pi}{12}, \frac{5\pi}{12}$

$\frac{7\pi}{12} \quad \frac{8\pi}{12} \quad \frac{10\pi}{12} \quad \frac{11\pi}{12}$

$\frac{13\pi}{12} \quad \frac{14\pi}{12} \quad \frac{16\pi}{12} \quad \frac{17\pi}{12}$

$\frac{19\pi}{12} \quad \frac{20\pi}{12} \quad \frac{22\pi}{12} \quad \frac{23\pi}{12}$



keep adding a period to each answer until you reach 2π

Find all values of θ for $0 \le \theta \le 360°$ that makes this equation true. Round to the nearest hundredth.

$$5\text{Cos}3\theta = 1$$

period $= \frac{360}{3} = 120°$

$\cos 3\theta = .2$

$3\theta = \cos^{-1}(.2)$

$\frac{3\theta}{3} = \frac{78.46°}{3} \quad \& \quad -78.46 + 360$

$\frac{281.54}{3}$

$\theta = 26.15° \;\&\; 93.85°$

$146.15° \quad 213.85°$

$266.15° \quad 333.85°$

Find all values of θ for $0 \le \theta \le 360°$ that makes this equation true. Round to the nearest hundredth.

$$5\text{Sin}2\theta - 1 = 1$$

period $= \frac{360}{2} = 180$

$\text{Sin}2\theta = .4$

$2\theta = \text{Sin}^{-1}(.4)$

$\frac{2\theta}{2} = \frac{23.58°}{2} \;\&\; \frac{156.42}{2}$

$\theta = 11.79° \;\&\; 78.21°$

$191.79° \quad 258.21°$

Find all values of θ for $0 \le \theta \le 2\pi$ that makes this equation true. Round to the nearest hundredth.

$8\cos 2\theta - 2 = 4$

$+2 \quad +2$

period $= \frac{2\pi}{2} = \pi$

$\frac{8\cos 2\theta}{8} = \frac{6}{8}$

$\cos 2\theta = .75$

$2\theta = \cos^{-1}(.75)$

$\frac{2\theta}{2} = \frac{.72}{2}$ & $\frac{-.72 + 2\pi}{2} = \frac{5.56}{2}$

$\theta = .36$ & 2.78

3.50 $\quad$ 5.92