Solve the equation:

$$2\cos^2\theta+\cos\theta-1=0 \quad 0\le\theta<2\pi$$

$$2\cos^2\theta+\cos\theta-1=0$$

$$(2\cos\theta-1)(\cos\theta+1)=0$$

$$2\cos\theta-1=0 \quad \text{or} \quad \cos\theta+1=0$$

$$\cos\theta=\frac{1}{2} \quad \text{or} \quad \cos\theta=-1$$

$$\theta=\frac{\pi}{3} \qquad \theta=2\pi-\frac{\pi}{3}=\frac{5\pi}{3} \qquad \theta=\pi$$

Solve the equation:

$$\cos 2\theta+\sin^2\theta=\frac{3}{4} \qquad 0\le\theta<2\pi$$

$$\cos^2\theta-\sin^2\theta+\sin^2\theta=\frac{3}{4}$$

$$\cos^2\theta=\frac{3}{4} \qquad \cos\theta=\pm\frac{\sqrt{3}}{2}$$

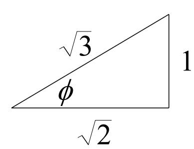
$$\theta=\frac{\pi}{6},\pi-\frac{\pi}{6},\pi+\frac{\pi}{6},2\pi-\frac{\pi}{6}$$

Solve: $\sqrt{2}\sin\theta+\cos\theta=1,\ 0\le\theta<2\pi$

$$r^2=(\sqrt{2})^2+1^2=2+1=3 \qquad r=\sqrt{3}$$

$$\frac{\sqrt{2}}{\sqrt{3}}\sin\theta+\frac{1}{\sqrt{3}}\cos\theta=\frac{1}{\sqrt{3}}$$

$$\cos\phi=\frac{\sqrt{2}}{\sqrt{3}} \qquad \sin\phi=\frac{1}{\sqrt{3}}$$



$$\sin\theta\cos\phi+\sin\phi\cos\theta=\frac{1}{\sqrt{3}}$$

$$\sin(\theta+\phi)=\frac{1}{\sqrt{3}}$$

$$\sin(\theta+\phi)=\frac{1}{\sqrt{3}}$$

$$\theta+\phi=\sin^{-1}\frac{1}{\sqrt{3}} \qquad \theta+\phi=\pi-\sin^{-1}\frac{1}{\sqrt{3}}$$

$$\theta=\sin^{-1}\frac{1}{\sqrt{3}}-\phi \qquad \theta=\pi-\sin^{-1}\frac{1}{\sqrt{3}}-\phi$$

$$\theta=\sin^{-1}\frac{1}{\sqrt{3}}-\sin^{-1}\frac{1}{\sqrt{3}} \qquad \theta=\pi-\sin^{-1}\frac{1}{\sqrt{3}}-\sin^{-1}\frac{1}{\sqrt{3}}$$

$$\theta=0 \qquad \theta=\pi-2\sin^{-1}\frac{1}{\sqrt{3}}$$

Solve the equation $\sin\theta\cos\theta=-\frac{1}{2}$

$$2\sin\theta\cos\theta=-1$$

$$\sin 2\theta=-1$$

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

$$\theta=\frac{3\pi}{4}+k\pi$$

In $[0,2\pi)$ use $\frac{3\pi}{4},\frac{7\pi}{4}$

Use a graphing utility to solve:

$$\cos x+x=2$$