

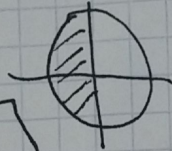
3.99  
24

$$\sqrt{1-2\sin^4 x} + \sqrt{6} \cos 2x = 0$$

$$\sqrt{1-2\sin^4 x} = -\sqrt{6} \cos 2x$$

$\Rightarrow \cos 2x$  בלתי שלילי ולכן  $\sqrt{1-2\sin^4 x}$

$$\frac{\pi}{2} + 2\pi k < 2x < \frac{3\pi}{2} + 2\pi k$$



$$\frac{\pi}{4} + \pi k < x < \frac{3\pi}{4} + \pi k$$

נסו גם  $\pi/4$

$$1 - 2\sin^4 x = 6 \cos^2 2x$$

$$1 - 2\sin^4 x = 6 \cos^2 2x$$

$$1 - 4\sin^2 x \cos^2 x = 6 \cos^2 2x$$

$$\sin^2 2x + \cos^2 2x - 4\sin^2 x \cos^2 x = 6 \cos^2 2x$$

$$\sin^2 2x - 4\sin^2 x \cos^2 x - 5 \cos^2 2x = 0$$

$$(\sin 2x - 5 \cos 2x)(\sin 2x + \cos 2x) = 0$$

$$\downarrow$$

$$\tan 2x = 5$$

$$x = \frac{1}{2} \arctan 5 + \frac{\pi}{2} k$$

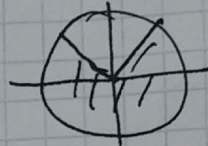
$$\downarrow$$

$$\tan 2x = -1$$

$$x = -\frac{\pi}{8} + \frac{\pi}{2} k$$

$$1 - 2\sin^4 x \geq 0$$

$$\sin^4 x \leq \frac{1}{2}$$



$$-\frac{\sqrt{11}}{6} + 2\pi k < 4x < \frac{\sqrt{11}}{6} + 2\pi k$$

$$\frac{\sqrt{11}}{24} + \frac{\pi}{2} k < x < \frac{\sqrt{11}}{24} + \frac{\pi}{2} k$$

תחילה נפתור את המשוואה  
 $\sin^4 x = \frac{1}{2}$   
 $|\sin x| = \frac{1}{\sqrt{2}}$

$$x = \frac{3\pi}{8}, \frac{11\pi}{8}$$

$$, \frac{1}{2} \arctan 5 + \frac{\pi}{2}, \frac{1}{2} \arctan 5 + \frac{3\pi}{2}$$