Solve $cos2\theta = sin\theta$ for $0 \leq \theta \leq 2\pi$

$$cos2\theta = sin\theta$$

$$cos2\theta \equiv 1 - 2sin^2\theta$$

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

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

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

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

$$sin\theta = \frac{1}{2}, sin\theta = -1$$

$$Arcsin\left(\frac{1}{2}\right) = \frac{\pi}{6}$$

$$Arcsin(-1) = \frac{3\pi}{2}$$

Solve $\mathbf{0 \leq x \leq 2\pi}$

$$x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$$