7.4 #25-28, 33,34,59
7.5 #1-3, 9-11, 43,45,47

only solve for $0 \le \theta < 2\pi$

1. Using a Pythagorean identity we see that the equation

$\sin x + \sin^2 x + \cos^2 x = 1$ **is equivalent to the basic equation**

$\sin x + 1 = 1$

$\sin x = 0$ **whose solutions are x =** $0, \pi$

Use Pythagorean and Double Angle identities to rewrite the given equations in 7.5, then factor and solve.

only solve for $0 \le \theta < 2\pi$

2. Using a Double Angle identity we see that the equation $\sin x + \sin 2x = 0$ is equivalent to the equation $\sin x + 2\sin x \cos x$ (double angle)

Factoring, we see that solving this equation is equivalent to solving two basic equations $\sin x = 0$ **and** $1 + 2\cos x = 0$

$\sin x (1 + 2\cos x) = 0$

Use Pythagorean and Double Angle identities to rewrite the given equations in 7.5, then factor and solve.

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only solve for $0 \le \theta < 2\pi$

3. $2\cos^2\theta + \sin\theta = 1$

*Pythagorean Identities:

$\sin^2\theta + \cos^2\theta = 1$

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

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

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

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

$2\sin^2\theta - \sin\theta - 1 = 0$ now factor

$(\quad)(\quad) = 0$ (FOIL)

CHECK EVEN AND ODD ANSWERS

7.4 #25-28, 33,34,59

7.5 #1-3, 9-11, 43,45,47

ONLY solve for specific solutions in the interval: $0 \leq \theta < 2\pi$

(NO general solutions: you don't have to use $2\pi k$)

CHECK 7.4 #25-28, 33, 34:
(odds and evens are included)

$\frac{3\pi}{2}$ $\frac{\pi}{3}$ $\frac{2\pi}{3}$ $\frac{4\pi}{3}$ $\frac{5\pi}{3}$

$\frac{\pi}{4}$ $\frac{\pi}{4}$ $\frac{3\pi}{4}$ $\frac{5\pi}{4}$ $\frac{5\pi}{4}$

$\frac{7\pi}{4}$ $\frac{7\pi}{4}$ $\frac{7\pi}{4}$ π

#59→ use degrees
(check answers in book)

CHECK 7.5 #1-3, 9-11:
(odds and evens are included)

0 π π $\frac{\pi}{2}$ $\frac{\pi}{3}$ $\frac{5\pi}{3}$

$\frac{\pi}{4}$ $\frac{3\pi}{4}$ $\frac{5\pi}{4}$ $\frac{7\pi}{4}$

$\frac{\pi}{6}$ $\frac{5\pi}{6}$ $\frac{7\pi}{6}$ $\frac{11\pi}{6}$

#43,45,47→ check answers in book