1) Solve $\sin^2 x - 2\sin x - 3 = 0$ on the interval $0 \le x \le 2\pi$

2) Solve $\csc^2 x - \csc x - 2 = 0$ on the interval $0 \le x \le 2\pi$

3) Solve $2\sec^2 x - \sec x - 1 = 0$ on the interval $0 \le x \le 2\pi$

4) Solve $\tan^2 x - \tan x - 6 = 0$ on the interval $0 \le x \le 2\pi$. Round answers to the nearest hundredth of a radian.

5) Solve $6\cos^2 x + 5\cos x - 6 = 0$ on the interval $0 \le x \le 2\pi$

6) Solve $3\csc^2 x - 5\csc x - 2 = 0$ on the interval $0 \le x \le 2\pi$

7) Solve $2\tan^2 x - 5\tan x - 3 = 0$ on the interval $0 \le x \le 2\pi$

8) Solve $\cot x \csc^2 x = 2\cot x$ on the interval $0 \le x \le 2\pi$

9) Solve for θ to the nearest hundredth, where $0 \le \theta \le 2\pi$

a) $3\tan^2 \theta - 2\tan \theta = 1$

b) $12 \sin^2 \theta + \sin \theta - 6 = 0$

c) $5 \cos(2\theta) - \cos \theta + 3 = 0$

Answer Key

1) $\frac{3\pi}{2}$ **2)** $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$ **3)** $0, 2\pi$ **4)** 1.25, 2.03, 4.39, 5.18 **5)** 0.84, 5.44 **6)** $\frac{\pi}{6}, \frac{5\pi}{6}$ **7)** 1.25, 2.68, 4.39, 5.82

8) $\frac{\pi}{4}, \frac{\pi}{2}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{3\pi}{2}, \frac{7\pi}{4}$ **9)a)** $\frac{\pi}{4}, 2.82, \frac{5\pi}{4}, 5.96$ **b)** 0.73, 2.41, 3.99, 5.44 **c)** $\frac{\pi}{3}, 1.98, 4.3, \frac{5\pi}{3}$