1. Find all the solutions to each equation with $0 \leq x < 2\pi$:

    a. $2\sin^2 x + 1 = 3\sin x$

    b. $\cos 2x = 1 - 3\sin x$

    c. $2\sin^2 x \cos x = \cos x$

    d. $\sin 3x = 1$

2. Approximate all the solutions to each equation with $0 \leq x < 2\pi$:

    a. $\cos x = .72$

    b. $3\cos^2 x - 5\cos x - 4 = 0.$