1. Determine the *exact* values (i.e. no decimal approximations)

   a. $\sin\left(\frac{\pi}{3}\right)$

   b. $\sin\left(\frac{3\pi}{4}\right)$

   c. $\cos\left(\frac{3\pi}{4}\right)$

   d. $\cos\left(\frac{7\pi}{6}\right)$

   e. $\sin\left(\frac{3\pi}{2}\right)$

   f. $\tan\left(-\frac{\pi}{4}\right)$

2. For each function, plot $y = f(x)$ and determine the exact values of x in the interval $[0, 2\pi]$ where $f(x) = 0$.

   a. $f(x) = \sin(x)\cos(x)$

   b. $f(x) = \sin(x)\big(2\cos(x) - 1\big)$