3. (*a*) Solve, for $0 \leq x < 2\pi$,

$$\cos x + \cos 2x = 0.$$

(5)

(*b*) Find the exact value of x, $x \geq 0$, for which

$$\arccos x + \arccos 2x = \frac{\pi}{2}.$$

(6)

[$\arccos x$ is an alternative notation for $\cos^{-1} x$.]