1. Solve each equation for all solutions.

(a) \( \sin(2x) \cos(x) - \sin(2x) \cos(x) = 1 \)

(b) \( \sec(t) \sin(t) - \sin(t) = 0 \)
2. Prove each of the following identities.

(a) \( \tan \left( \frac{\pi}{4} - t \right) = \frac{1 - \tan(t)}{1 + \tan(t)} \)

(b) \( \frac{\sin(x) + \sin(y)}{\cos(x) + \cos(y)} = \tan \left( \frac{x + y}{2} \right) \)