Math 141 - Trigonometry Homework

1. Convert the following angles from degrees to radians

   (a) $300°$

   (b) $-210°$

   (c) $900°$

2. Convert from radians to degrees

   (a) 4π

   (b) 2 radians

   (c) $-\dfrac{3\pi}{4}$

3. Find the exact values of $\sin\theta, \cos\theta, \tan\theta$ when $\theta = \frac{3\pi}{4}$.

4. Find all solutions of the equation $\sin x = \tan x$.

5. Find all solutions of the equation $|\tan x| = 1$ in the interval $[0, \pi)$.

6. Find all x values on the interval $[0, 2\pi]$ such that $\sin x > \cos x$.

7. If the sun has an angle of elevation equal to $73°$ above the horizon. then how long is the shadow cast by a 5 meter tall flag pole?

8. Simplify.

   (a) $\dfrac{\tan\theta + \cot\theta}{\sec^2\theta}$

   (b) $\dfrac{\sin^2 x}{1 - \cos x} - 1$