Homework 4

Name: Date: May 28, 2013

P 1. Solve

$$\sin x \tan^2 x - 6 \sin x \tan x = -5 \sin x$$

P 2. Solve

$$\csc^2 x = 5 \csc x$$

P 3. Solve

$$2\sec^2 x + \tan^2 x - 3 = 0$$

on $[2\pi, 6\pi)$.

P 4. The monthly sales S (in hundreds of units) of skiing equipment at a sports store are approximated by

$$S = 58.3 + 32.5 \cos\left(\frac{\pi t}{6}\right).$$

where t is the time (in months), with $t = 1$ corresponding to January. Determine the months in which sales exceed 7500 units.

P 5. Determine whether the statement is true or false. Justify your answer.

(a) "The solution to $\sin x = 0.4$ is $x = \arcsin 0.4$ and only $x = \arcsin 0.4$."

(b) "The equation $2 \sin 4t - 1 = 0$ has four times the number of solutions in the interval $[0, 2\pi)$ as the equation $2 \sin t - 1 = 0$."