Math 154 – Identities Quiz   **Name** _____

1. Given $\sec x = 4,\ \sin x > 0$, find cos(x) _____ and tan(x)

    _____

2. Use identities to simplify the expression. $\cot \theta \sec \theta$

    _____

3. Use identities to simplify. $(\sin x - \cos x)^2$. Circle the correct answer.

    a. $1 + \sin x + \cos x$

    b. $2 - 2\sin x \cos x$

    c. $1 - 2\sin x \cos x$

    d. $1 + 2\sin x + \cos x$

    e. $1 - \sin x \cos x$

4. Use fundamental identities to simplify the expression below.

    $\cot^2 \alpha - \cot^2 \alpha \cos^2 \alpha$

    _____

5. Evaluate the following expressions.

a. $2 \cos x + 2 \sin x \tan x$

b. $\dfrac{5 \tan^2 \theta}{\sec \theta}$

c. $\dfrac{3}{\tan 4x} + \dfrac{3}{\cot 4x}$

d. $\dfrac{6 \tan x \cot x}{\cos x}$

6. Solve the following equations.

a. $4\cos x + 2 = 0$

b. $5\sqrt{3} \csc x - 10 = 0$

c. $2\sin^2 x = 6\cos^2 x$

d. $2\cos^3 x = 2\cos x$