Math-19 Homework #16

Problems

1). Prove that the following is an identity:

$$\frac{1}{\csc x + \cot x} + \frac{1}{\csc x - \cot x} = 2\csc x$$

2). : Write the following as a function of x with no trig functions:

$$\sin\left(\sec^{-1}\frac{1}{\sqrt{1-x^2}} + \csc^{-1}\sqrt{1+x^2}\right)$$

3). Write the following as a single sine function. Note that you can use approximate value (i.e., your calculator) for the various coefficient and angle calculation. Use 4 decimal places.

$$\cos\left(x + \frac{\pi}{3}\right) + \sin\left(x - \frac{\pi}{4}\right)$$

4). Find *all* possible solutions for x:

$$2\sin^2 x + (\sqrt{3} - 4)\sin x - 2\sqrt{3} = 0$$

5). Find *all* possible solutions for x:

$$\sin 2x + cosx = 0$$