§2.1: Using Fundamental Identities

1.] Suppose we know that $\sec(\theta) = -\frac{3}{2}$ and $\tan(\theta) > 0$. Use appropriate identities to find all six ratios of this angle θ.

2.] Simplify the following trigonometric expression: $\sin(x)\cos^2(x) - \sin(x)$.

3.] Factor the following trigonometric expression: $\tan^2(\theta) + 2\tan(\theta) - 3$

4.] Use an identities to factor the following trigonometric expression: $\csc^2(x) - \cot(x) - 3$

5.] Perform addition on the following expression and then simplify: $\dfrac{\sin(\theta)}{1+\cos(\theta)} + \dfrac{\cos(\theta)}{\sin(\theta)}$

6.] Rewrite the following expression so it is not in fractional form: $\dfrac{1}{1+\sin(x)}$

7.] Use the substitution $x = 3\sin(\theta)$ to write $\sqrt{9-x^2}$ as a trigonometric function of θ.