

2.1 – Using Fundamental Trigonometric Identities

Be sure to follow [College Algebra formatting guidelines](#) in your work. Just use "1420" in the top left corner, instead of "1340." I think I got them mixed up in previous assignments.

Be sure to show all work and circle final answers.

1. (5 pts) Given $\sec(x) = -\frac{7}{3}$ and $\tan(x) < 0$, find the value of the other 5 trigonometric functions corresponding to the angle x .
2. (5 pts) Factor and simplify $\tan^2(x) - \tan^2(x)\sin^2(x)$.
3. (5 pts) Factor and simplify $15\sin^2(x) - 22\sin(x) + 8$. If you're not big on factoring quadratic expressions, you might try the Sledgehammer Approach to Factoring from College Algebra: [Video](#) and [Notes](#).
4. (5 pts) Factor and simplify $\cot^2(\theta) + \csc(\theta) - 11$. I suggest you employ a Pythagorean Identity to help you along.
5. (5 pts) Simplify $5\sin\left(\frac{\pi}{2} - \theta\right)\csc(\theta)$
6. (5 pts) Simplify $\tan(x) - \frac{\sec^2(x)}{\tan(x)}$. Hint: Pythagorean Identity and the arithmetic of fractions.