

Math 2 — Additional Homework (Trigonometry and Inverse Trigonometry)

due Friday, February 14, 2014

In the following problems, you are asked to show why certain identities are valid. You should show in detail (this means with relevant drawings, geometric reasoning, and reference to applicable formulas) why these identities hold.

It is recommended you start on this assignment as soon as possible, so that any questions can be directed to your instructor during office hours, or tutors during tutorial hours.

1. Show that $\tan(\arccos(\frac{3}{4})) = \frac{\sqrt{7}}{3}$.

2. Show that $\sec(\arctan(2.4)) = \frac{13}{5}$.

3. Show that $\cot(\arcsin(\frac{-\sqrt{3}}{8})) = -\sqrt{\frac{61}{3}}$.

4. Show that $\sec(\arctan(\frac{x-3}{2})) = \frac{2}{\sqrt{x^2 - 6x + 13}}$.