Homework Assignment 1

Assigned Tuesday September 9; due Friday September 19, 2PM, at SS 1071

Required reading. Read, reread and rereread your notes from this week's classes, and make sure that you really, really really, really really really understand everything in them.
Recommended reading. Read chapter 7, "analytic trigonometry", sections 7.1–7.3, in Stewart's "precalculus". This chapter is available stand alone at the UofT bookstore.
To be handed in.

1. Write 72° in radians.
2. Find formulas for $\tan 2\alpha$ and for $\tan\left(\frac{\pi}{4}+\alpha\right)$ in terms of $\tan\alpha$.
3. Find formulas for $\sin\alpha$, $\cos\alpha$ and $\tan\alpha$ in terms of $\tan\frac{\alpha}{2}$.
4. Find formulas for $\sin\alpha\sin\beta$ and $\cos\alpha\cos\beta$, similar to the one we found in class for $\sin\alpha\cos\beta$.
5. Prove the formula $\sin\alpha+\sin\beta = 2\sin\frac{\alpha+\beta}{2}\cos\frac{\alpha-\beta}{2}$ and find a similar formula for $\cos\alpha+\cos\beta$.