

Homework Assignment 1

Assigned Tuesday September 14; due Friday September 24, 2PM, at SS 1071

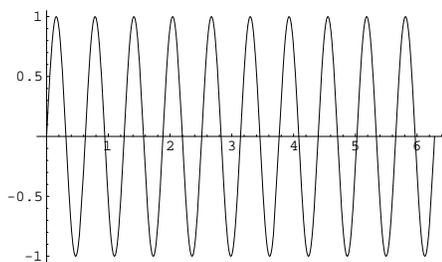
Required reading. Read, reread and reread your notes from this week's classes, and make sure that you really, really really, really really really understand everything in them. Do the same every week!

Recommended reading. Pick any trigonometry textbook and browse through it. We've obviously only scratched the surface in class!

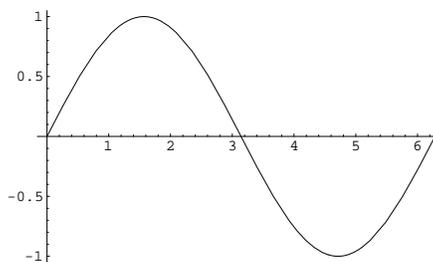
To be handed in.

1. Write 108° in radians.
2. Find a formula 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. Calculate $\tan 5\pi/8$ only using square roots and the four basic operations.
5. Find formulas for $\sin \alpha \cos \beta$ and $\cos \alpha \cos \beta$, similar to the one we found in class for $\sin \alpha \sin \beta$.
6. Prove the formula $\sin \alpha + \sin \beta = 2 \sin \frac{\alpha+\beta}{2} \cos \frac{\alpha-\beta}{2}$ and find a similar formula for $\cos \alpha + \cos \beta$.

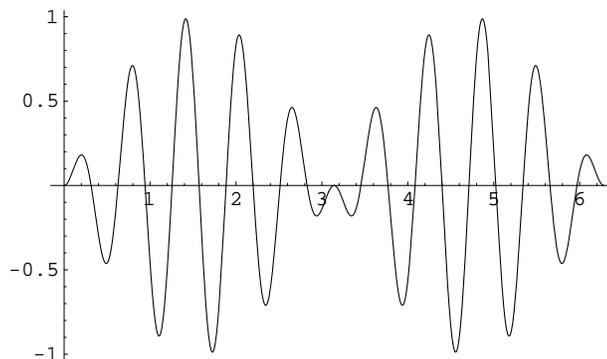
A word about AM radios.



$\sin 10x$



$\sin x$



$\sin x \cdot \sin 10x$