Exercises

1. Maya seeks a number δ having the property that if $0 < x < \delta$, then $\frac{1}{2} < \cos(x) < 1$ (where x and δ are measured in radians). Do any of the following choices for δ work? Does more than one of the choices work?
   (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$ (c) $\frac{\pi}{4}$

2. Suppose $f(x) = 2x + 3$. In order to guarantee that $|f(x) - 5| < \varepsilon$ whenever $|x - 1| < \delta$, how should δ be chosen (in terms of ε)?

3. Suppose the projection of $\vec{v}$ onto $\vec{w}$ equals the projection of $\vec{w}$ onto $\vec{v}$. What can you conclude about the vectors $\vec{v}$ and $\vec{w}$?

Assignment

- Be prepared for a quiz (about limits) in class tomorrow (Thursday) on sections 2.2, 2.3, and 2.4.