1. Girls: Use GC to graph \( f(x) = \frac{\sin(x)}{x} \) using Zoom 4; sketch the graph. Near \( x = 0 \)

   ![Graph of f(x) = sin(x)/x]

Guys: Use GC to graph \( f(x) = \frac{x}{\sin(x)} \) using Zoom 4; sketch the graph. Near \( x = 0 \)

2. What is \( \lim_{x \to 0} \frac{\sin(x)}{x} = \) ?

   \[ \text{What is } \lim_{x \to 0} \frac{x}{\sin(x)}? = 1 \]

   Memorize #2 and #3.

3. Evaluate algebraically: \( \lim_{x \to 0} \frac{1 - \cos(x)}{x} \)

   \[ \lim_{x \to 0} \frac{1 - \cos(x)}{x} = \lim_{x \to 0} \frac{1 - \cos^2(x)}{x(1 + \cos(x))} = \lim_{x \to 0} \frac{\sin^2(x)}{x(1 + \cos(x))} = \lim_{x \to 0} \frac{\sin(x)}{x} \cdot \frac{\sin(x)}{1 + \cos(x)} = 1 \cdot 0 = 0 \]

4. Several techniques for evaluating limits—look at the assignment to anticipate methods.

   a. direct substitution
   b. rationalize numerator (using conjugate)
   c. graphing
   d. trig identities
   e. memorize 2 from today
   f. factoring
   g. expand
   h. common denominator

Due Thurs, Sept 16 – A.6 p.66 #17, 19-28 algebraically, 37, 31-36