Notes on limit problems:

1. Try to avoid taking limits such as $\lim_{x\to 0} f(x)$ by sampling a few points and making conclusions based solely on that. This procedure quickly falls apart when the limit is something that is less obvious in its decimal expansion (e.g. $\sqrt{7/11} \approx 0.7977$). You can also miss important details about the behavior of the function in between points sampled. For example, consider $\lim_{x\to 0} f(x)$ where $f(x) = \sin\left(\frac{\pi(x+2)}{2x}\right)$. What happens when you evaluate only $f(0.1)$, $f(0.01)$, and $f(0.001)$? With these shortcomings in mind, keep this approach to a last resort when writing up your solution.

2. There were quite a few instances where l'Hôpital's rule was applied to evaluate limits 2c and 2d. Please use another method for these questions if possible. You *might* not receive full credit on exams for using a technique that has not been covered in class.

3. One-sided limits can be equal to a number (see definition). You should state $\lim_{x\to 0^-} f(x) = 0$ in place of $\lim_{x\to 0^-} f(x)$ approaches 0.

4. The symbol $\lim\limits_{x\to a}$ tells the reader a limit is taken on the expression that follows. Things like $\lim\limits_{x\to a} = 0$ are therefore not meaningful. On a related note, don't forget to keep $\lim\limits_{x\to a}$ around until you are done with the substitutions!