Part I (due at the beginning of class Tuesday, September 23)

Think about problems 11–13 on the Functions and Limits handout and be ready to discuss them in class Tuesday.

Part II: Problems (due at the beginning of class Tuesday, September 23)

1. Use the Squeeze Theorem to find $\lim_{x\to 3}\left((x^2-9)\sin\frac{1}{x^2-9}\right)$. Make sure to carefully explain your solution, showing how you're applying the Squeeze Theorem.
2. For each part, create an example of a function $f(x)$ that satisfies the description and explain why your example satisfies it, or explain why it's not possible to create such an example.
   (a) A function f and a real number c such that $\lim_{x\to c} f(x)$ exists but the function is not defined at c.
   (b) Two functions $f(x)$ and $g(x)$ and a real number c such that $\lim_{x\to c}(f(x)+g(x)) \neq \lim_{x\to c} f(x) + \lim_{x\to c} g(x)$.