Math 1110: **Limits involving infinity** Sept 10 (Mon)

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Here we will inquire about the notion of limit when x goes to infinity or negative infinity.

1. Look at the definition of a limit $\lim_{x\to a} f(x)$ that we have defined in class.
   Having this definition in mind, how can we define the limit $\lim_{x\to\infty} f(x)$? In other words, how can modify the definition to make it work for x going to infinity while keeping the notion pre-determined level of precision?

2. Look at the graph of $f(x) = \dfrac{6x^2 - 5x + 2}{2x^2}$. Use this definition and the graph to determine $\lim_{x\to\infty} f(x)$ and $\lim_{x\to-\infty} f(x)$. Do your answers make sense with respect to what you see on the graph?

3. Again, looking at the graph of $g(x) = \sin(\pi x)$ and at your definition, determine $\lim_{x\to\infty} f(x)$ and $\lim_{x\to-\infty} f(x)$?