Math 111-002
Assignment # 5

Please remember that the assignment consists of only a sample of the kind of questions you are supposed to be able to do. It is **not** a safe practice to just do the assignment, and that is why there is a list of "suggested practice problems" in the course web page.

1. Find the limit

(a) $\lim_{x\to\pi/2} \dfrac{\sin x}{x}$

(b) $\lim_{x\to 0} \dfrac{\sin x}{x}$

(c) $\lim_{x\to\infty} \dfrac{\sin x}{x}$

(d) $\lim_{x\to 0} \dfrac{x-\sin x}{x^3}$

(e) $\lim_{x\to 0} x - \sqrt{x^2-x}$

(f) $\lim_{x\to 0} x\,\sin(1/x)$

(g) $\lim_{x\to 0} \dfrac{x+\tan 2x}{x-\tan 2x}$

(h) $\lim_{x\to 1} \left(\dfrac{1}{\ln x} - \dfrac{1}{x-1}\right)$

(i) $\lim_{x\to 0} \dfrac{e^{2x}-e^{3x}}{x}$

(j) $\lim_{x\to 0} \dfrac{2^x-1}{x}$