SI Session Week 2
Thursdays 4:00 – 5:30 PM, Rm. 1229
Fridays 2:00 – 3:30 PM. Rm. 1223

Prof. Stockton : Calculus I : Fall 2007
SI Leader : Neil Jody

Directions:
Take limits going to infinity. Also identify discontinuities and classify as removable/non-removable.

Tips: $\frac{Big\#}{Small\#} = Huge\# \Rightarrow \pm\infty$;
$\frac{Small\#}{Big\#} = tiny\# \Rightarrow 0$

1.) f(x) = $\dfrac{\frac{7}{x-2} - \frac{x+5}{x^2+11x-26}}{\frac{1}{x^2+24x+143} + \frac{1}{x}}$

2.) f(x) = $\dfrac{x^5-9x^4-13x^3+117x^2+36x-324}{x^6+5x^5-9x^4-53x^3-40x^2+72x+360}$

3.) f(x) = $\dfrac{x^3+6x^2+3x-10}{x^4-10x^3+11x^2+46x-48}$

4.) f(x) = $\dfrac{|x+4|}{x^2-16}$

5.) f(x) = $\dfrac{xe^{-2x+1}}{x^2+x}$

6.) f(x) = $\dfrac{\sqrt{3x^4+x}}{x^2-8}$

7.) f(x) = $\sqrt[3]{\dfrac{2+3x-5x^2}{1+8x^2}}$

8.) f(x) = $2x^3 - 100x + 5$

9.) f(x) = $\dfrac{\sqrt{4x^2+5x}}{x-1}$

10.) f(x) = $\dfrac{2-x}{\sqrt{7+6x^2}}$

11.) f(x) = $\dfrac{x+4x^3}{1-x^2+7x^3}$

12.) f(x) = $\dfrac{|x^2-4|x}{x+2}$

13.) f(x) = $\begin{cases} 2x^2+5 & x<0 \\ \dfrac{3-5x^3}{1+4x+x^3} & x\geq 0 \end{cases}$

14.) f(x) = $\begin{cases} \dfrac{2+3x}{5x^2+6} & x<1,000,000 \\ \dfrac{\sqrt{36x^2-100}}{5-x} & x<1,000,000 \end{cases}$

15.) f(x) = $\dfrac{\tan(x)}{x}$

Practice:

$\frac{1}{2}\left[w^3(9w+1)^5\right]^{-\frac{1}{2}}\left[w^3(5)(9w+1)^4(9)+(9w+1)^5(3w^2)\right]$

$\dfrac{(3x+2)^{\frac{1}{2}}(\frac{1}{3})(2x+3)^{-\frac{2}{3}}(2)-(2x+3)^{\frac{1}{3}}(\frac{1}{2})(3x+2)^{-\frac{1}{2}}(3)}{3x+2}$