Name:_____

MA 2310: Quiz 2

Show all work for credit.

1. $\lim_{x\to 1} \dfrac{x}{x^2+1}$
2. $\lim_{x\to 1} \dfrac{x^2+4x+3}{x^2-1}$
3. $\lim_{x\to 0} \dfrac{\sin(x)}{5x}$
4. $\lim_{h\to 0} \dfrac{f(x+h)-f(x)}{h}$ where $f(x) = 2x - x^2$.
5. $\lim_{x\to \infty} \dfrac{x}{x^2+1}$
6. $\lim_{x\to \infty} \dfrac{x^3}{x^2+1}$
7. $\lim_{x\to \infty} \dfrac{x-3x^2}{x^2+1}$
8. $\lim_{x\to -\infty} \dfrac{x-3x^2}{x^2+1}$
9. $\lim_{x\to \infty} e^{3x+2}$
10. $\lim_{x\to -\infty} e^{3x+2}$
11. $\lim_{x\to \infty} \ln\left(\dfrac{4x^2+2}{2x^2+1}\right)$
12. $\lim_{x\to \infty} \ln\left(\dfrac{4x^3+2}{2x^2+1}\right)$
13. $\lim_{x\to 0} \dfrac{1}{x}$ Compute limit from left side and right side (show your work).
14. $\lim_{x\to 4} \dfrac{x}{(x-4)^2}$ Compute limit from left side and right side (show your work).
15. $\lim_{x\to \infty} \dfrac{1}{e^x}$