

Date: 9/13/13.

Instructor: Cody Clifton.

Name: \_\_\_\_\_

This 10-point quiz will test your knowledge of domain, limits, and continuity. Read carefully and always show your work. You have 15 minutes... good luck!

(1) State the domain of the function  $f(x) = \frac{\sqrt{x+5}}{x^2-1}$ .

(2) Find  $\lim_{x \rightarrow \odot} 5x^4 + 4x^3 + 3x^2 + 2x + 1$ .

(3) Evaluate (a)  $\lim_{x \rightarrow 1} \frac{x^2-9}{x-3}$  and (b)  $\lim_{x \rightarrow 3} \frac{x^2-9}{x-3}$ .

(4) Estimate (a)  $\lim_{x \rightarrow 2^-} \frac{1}{2-x}$  and (b)  $\lim_{x \rightarrow 2^+} \frac{1}{2-x}$ .

(5) Where is this piecewise function continuous? 
$$f(x) = \begin{cases} -1, & -1 \leq x \leq 0, \\ \frac{1}{x^2}, & 0 < x < 1, \\ x^2, & 1 \leq x < 2, \\ 2, & x > 2. \end{cases}$$