

QUIZ 1
Math 220-51

NetID:
(Please don't put your name!)

September 30, 2009

Question 1. (6pts) *Sketch the graph of the function $f(x) = 2(x - 1)^2 + 1$.*

Question 2. (6pt) *Find $\lim_{x \rightarrow 4} \frac{\sqrt{x} - 2}{x^2 - 16}$.*

Question 3. (7pts) Let $f(x) = \begin{cases} x + 1 & \text{if } x < 1 \\ 2^x & \text{if } x > 1 \\ 3 & \text{if } x = 1 \end{cases}$

1. $\lim_{x \rightarrow 1^-} f(x) =$

2. $\lim_{x \rightarrow 1^+} f(x) =$

3. $\lim_{x \rightarrow 1} f(x) =$

4. *Is f continuous at $x = 1$? Explain your reasoning!*

Question 4. (6pts) Determine where the following function is continuous:

$$f(x) = \frac{\sqrt{3x - 6} + \sin(x^2)}{x^2 - 25}$$