**Math 1151** Name:_____

**Quiz 4**

**20 points**

**General Directions:** Answer each question thoroughly. Incorrect answers with work shown may receive partial credit, but unsubstantiated answers will receive NO CREDIT. I do not want (decimal) approximations unless specifically asked for. I want the exact numbers. Justify all claims using calculus concepts (i.e., theorems, definitions, etc.). I am looking for mathematical logic and reasoning. Show all of your work!! Explain! Explain! Explain!

1. (10 points) Show that $f(x) = \begin{cases} x^2 - 4 & x \leq 2 \\ 3x - 6 & x > 2 \end{cases}$ is continuous at $x = 2$.

2. (10 points) Evaluate $\lim_{x \to -3} \dfrac{\sqrt{4+x} - 1}{x+3}$.