Calculus I **Quiz 2–003** Name: _____

D. P. Story, Spring 2015 SID: _____

Global Instructions: (10 points) Solve each of the following problems without error. *Show all details.* Box in your answers. Use good notation, you *will* be marked off for bad notation.

(3pts) **1.** Identify all numbers x at which the function $f(x) = \dfrac{x+2}{\sqrt{x-1}}$ is continuous.

(3pts) **2.** Given $f(x) = \begin{cases} 3x^2 - 2x & x < -1 \\ 6x^2 + x & x \geq -1 \end{cases}$. Is this function (a) continuous at $x = -1$;, (b) discontinuous with a removable discontinuity at $x = -1$; or (c) discontinuous with a jump discontinuity at $x = -1$? Justify your response.

(4pts) **3.** Define the function $f(x) = 3x^2 - 2x$. Use one of the formulas:

$$m = \lim_{x \to a} \frac{f(x) - f(a)}{x - a} \quad \text{or} \quad m = \lim_{h \to 0} \frac{f(a+h) - f(a)}{h}$$

Then the slope of the line tangent to the graph of f at the point $(1, 1)$.

Calculations

Side Calculations