King Fahd University of Petroleum & Minerals
Department of Mathematics and Statistics
Math101/Calculus I
Quiz 2
Two Problems, February 14th, 2016 [1]

Problem 1 (7.5 **points**)

Prove using the ϵ and δ definition that

$$\lim_{x \to 1} \frac{1 + 3x}{2} = 2.$$

Problem 2 (7.5 **points**)

Find the values of the parameters a and b for which the following function is continuous everywhere;

$$f(x) = \begin{array}{ll} x + a, & \text{if } x \leq 0, \\ ax^2 + b, & \text{if } 0 < x \leq 2, \\ \frac{1}{x} + 2b, & \text{if } 2 < x \end{array}$$

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[1]The quiz lasts 20 minutes.