Department of Mathematics and Statistics, KFUPM

Math-101 Semester-151 QUIZ III

NAME: S.No. ID:

Maximum Marks: 8 Section: Time Allowed: 25 minutes

(1)(a) Find $f'_-(4)$ and $f'_+(4)$ for the function $f(x) = \begin{cases} 0 & x \leq 0 \\ 5-x & 0 < x < 4 \\ \dfrac{1}{5-x} & x \geq 4. \end{cases}$

(b) Sketch the graph of the function f.

(2) For what values of a and b is the line $2x + y = b$ tangent to the parabola $y = ax^2$ when x = 2 ?

(3) If $f(x) = \dfrac{x^2-1}{e^x(x^2+1)}$, find $f'(x)$.