Math 1A 108 DIS Quiz 8 24 Oct 2018

Name: _____ Score: _____

1. Find the absolute maximum and absolute minimum values for the functions in the given interval. (3 points each)

   (a) $f(x) = x^3 + 3x^2 - 2$, $[-1, 2]$

   (b) $f(x) = xe^{2x}$, $[-2, 1]$

2. (a) State the Mean Value Theorem. (1 point)

   (b) Show that $e^x > 1 + x$ for $x > 0$. (Hint: Apply Mean Value Theorem on $f(x) = e^x - 1 - x$) (2 points)

   (c) Show that $e^x > 1 + x + \frac{x^2}{2}$ for $x > 0$. (1 point)