Mathematics 741

ASSIGNMENT 1

due Tuesday, October 8, 2019 – BEFORE CLASS BEGINS

Please begin the solution to each question on a new page and then arrange the solutions in the correct order to assist marking.

Hint: Question 2 Take $x_0(t) = r(t)$. Use the given inequality to generate $x_i(t)$, $i = 1, 2, \ldots$ starting from $x_0(t)$. Prove that the sequence generated converges uniformly to a function $x(t)$. Consider $g(t) = x(t) - f(t)$, and find and then solve a first order linear ODE for $g(t)$.

THE END