MA157 - ANALYSIS 1, 2020-2021. ASSIGNMENT 10

- (1) Select one of the six questions on Term Test 2, and submit an excellent solution to it. In this question and the next one, I encourage you to select a question on which your mark was not high, and to take this opportunity to clarify your misunderstandings; or you can select Question 6.
- (2) Select another one of the six questions on Term Test 2, and submit an excellent solution to it.

If your final mark on the test was 32 points or higher out of 40, you may instead submit a solution to a question of your choice from Spivak's Chapter 11. I encourage you to select a question that you find interesting and fun.

(3) Let $h: \mathbb{R} \to \mathbb{R}$ be a differentiable function that satisfies $h'(x) = 1 + \sin^2(x + \frac{\pi}{4})$ for all x and h(0) = 5. (a) In 1–3 sentences, explain why h is one-to-one. (b) Let $g = h^{-1}$ (the inverse function). Find g'(5). Show your work.