MATH 3451 Homework Assignment 4

Instructions: Solve and turn in all of the assigned problems, taken from our textbook. Problems marked with a * must be done by graduate students, and may be attempted by undergraduates for extra credit.

Due on Thursday, October 17th at the beginning of class.

Section 1.6 (page 43): 2, 4(a,c), 6 (for 4(a), a set T of sequences is 'closed' if the limit of a convergent sequence in T must also be in T.)

• Prove that if $\mu > 5$, then S^{-1} is continuous, where S is the symbolic coding map from Λ to $\Omega_2 = \{0, 1\}^{\mathbb{N}}$ from class. (Hint: you can use problems from the last homework assignment!)

• If $\mu > 2 + \sqrt{5}$, how many points of least period 4 does the function $f_\mu(x) = \mu x(1 - x)$ have? (If you're doing this by using sequences in Ω_2, you need to explain why they have the desired properties after being transferred to Λ.)