Foundations of Computer Science (COMP109)

Tutorial for Week II, 26.10.2020 – 30.10.2020

A reasonable attempt at answering Question (II.4.) should be submitted on Canvas by ***23:59 on Tuesday 27.10.2020*** *either as a text entry, a text file (txt), a pdf file, or a photo of the handwritten answer. This assignment makes up 1% of your final mark. We would like to encourage you to discuss the questions with your fellow students in person or on the Canvas discussion board, but do not copy your answer from anybody else.*

II.1. Prove for all integers n, if n is even then n^2 is even.

II.2. Prove for any natural number n that $n^2 + n + 1$ is always odd.

II.3. Prove by contradiction that there is no greatest even integer.

II.4. Prove by contradiction that for any integer n if n^2 is odd then n is odd.

II.5. Use proof by contradiction to show that if a product of two positive integers is greater than 100 then at least one of the numbers is greater than 10.