

Foundations of Computer Science (COMP109)

Tutorial I, Week 30.09.2024 – 04.10.2024

A reasonable attempt at answering Question (I.7.) should be submitted on Canvas by 14:00 on Tuesday 01.10.2024 as a text entry, a text file (txt), a pdf file, or a photo of the hand-written answer. This assignment makes up 1% of your final mark. We want 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.

- I.1. Give an example of natural numbers x and y such that $x - y$ is not a natural number.
- I.2. Give examples of integers x and y such that x/y is not an integer.
- I.3. Write down a list of all prime numbers that are even.
- I.4. Prove that there exist integers m and n such that $m > 1$, $n > 1$ and $\frac{1}{m} + \frac{1}{n}$ is an integer.
- I.5. Prove that there exists *distinct* integers m and n such that $\frac{1}{m} + \frac{1}{n}$ is an integer.
- I.6. Prove that if any integers m and n are even, then so is $m - n$.
- I.7. Prove that the sum of any two odd integers is even.