Foundations of Computer Science (COMP109)

Tutorial for Week I, 19.10.2020 – 23.10.2020

*A reasonable attempt at answering Question (I.7.) should be submitted on Canvas by **23:59 on Tuesday 20.10.2020** 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.*

I.1. Give an example of natural numbers x and y such that $x-y$ is not a natural numb

x = 2, y = 4

I.2. Give examples of integers x and y such that x/y is not an integer.

x =2, y=3

I.3. Write down a list of all prime numbers that are even.

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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.

m = 2. n =2

I.5. Prove that there exists *distinct* integers m and n such that $\frac{1}{m} + \frac{1}{n}$ is an integer.

m = 2, n = -2

I.6. Prove that if any integers m and n are even, then so is $m - n$.

m = 2k, n = 2lm - n = 2k - 2l =

I.7. Prove that the sum of any two odd integers is even.

Let m = 2k + 1, n = 2l + 1m + n = (2k + 1) + (