CS41001 : Theory of Computation
Autumn 2020

Assignment 2

Guidlines: Each question carries **5 marks.** *Do not search for solutions online.*

1. Give a TM algorithm where if the input is $0^n\#0^m$ then the algorithm will decide if n and m are co-prime.
2. Show that $f(n) = 2^{2^n}$ is a total recursive function. Input string is 0^n.
3. Show that $f(m, n) = m - n$ is a total recursive function. Input string is $0^m\#0^n$. Assume $m \geq n$.