

CSC220---Fall 2020
Test #1
Due at 8:00 am (by email) on 9/30/2020

Instruction on when and how to submit your answers:

Only the **first** submission will be graded, the time stamp of your email is the indication of the submission time. You should email me your answers before the deadline (7:59 am on 9/30/2020).

The format of your submission could be Microsoft word, pdf or image. If the size of the attachment is more than 2 MB, please put all the pages into one folder and use the zip utility to compress that folder. To use zip utility in Windows, you can right click on a file, select "send to" and then click "compress", this will convert a file to a zipped file (other type of files such as "rar" files are not acceptable). When the folder is zipped you can attach it to an email and submit it. My email is included in the course syllabus (aagah@wcupa.edu), which is also posted on D2L.

Q1: Use induction to prove: $n \geq 1, n \in \mathbb{N}$

$$1 \cdot 2 + 2 \cdot 3 + \dots + n(n+1) = \frac{n(n+1)(n+2)}{3}$$

Q2: Determine whether $\{2\}$ is an element of these sets:

a) $\{2, \{2\}\}$

b) $\{\{\{2\}\}\}$

Q3: prove if n is an integer and $n^3 + 5$ is odd then n is even.