Quiz:

Name: _ _ _ _ _ _ _ _ _   **Student ID:** _ _ _ _ _ _ _ _ _ _ _

- $\sum_{i=1}^{5}$ (i-1) = ?

- $\sum_{i=1}^{1000}$ i = ?

- f(x) = x^2 - x - 12. What is the first derivative of this f(x) with respect of x?

- Find the matrix multiplication:

A = $\begin{pmatrix} 2 & 3 & 5 \end{pmatrix}$ B = $\begin{pmatrix} 1 & 2 \\ 2 & 4 \\ 1 & 1 \end{pmatrix}$

A.B =?   B.B =?

- You are given the following pseudocode. What is the big O for the number of operations by this code (or, runtime)?
  X = n   // Here n is any number larger than 1
  While X > 1:
          X = X/2

- Write a function in python or C (or pseudocode) that returns positive elements in a list of size n as a form of another list.

Example: Input [1, 3, -4, -6, 2, 7] and n = 6

Output: [1, 3, 2, 7]

- What is a greedy algorithm?

- There are two popular search algorithm, breadth first search (BFS) and depth first search (DFS). Suppose we have a list of activities that you need to finish in an order. To sort the list of activities, which sorting method you would follow and why?

- What is the output of the following expression when A = 1, B = 0 and C = 1?

NOT ((A OR B) AND (A OR C)) =?