



## 2A: Programming Fundamentals

### Batch Launchpad (C++ Foundation)

1. Write a program that asks the user for a number  $n$  and gives him the possibility to choose between computing the sum and computing the product of  $1, \dots, n$ .
2. Write a program to input a number and print the sum of all its even digits and sum of all its odd digits; separately.
3. Write a program to find  $x^n$ . Take  $x$  and  $n$  from the user.
4. Write a program to generate the reverse of a given number.
5. Write a program to print first 20 terms of the series  $3n+2$  which are not multiples of 4.
6. Given a binary number convert it into decimal.
7. Given a decimal convert it into binary.
8. Write a program to find square root of an input.
  - a. Just find the integral part
  - b. Find the square root with an accuracy of  $n$  decimal points,  $n$  is provided by the user.
9. You are given  $S$  a sequence of  $n$  integers  $S = s_1, s_2, \dots, s_n$ . Please, compute if it is possible to split  $S$  into two parts:  $s_1, s_2, \dots, s_i$  and  $s_{i+1}, s_{i+2}, \dots, s_n$  ( $1 \leq i < n$ ) in such a way that the first part is strictly decreasing while the second is strictly increasing one. First take  $n$  as input and then take  $n$  more integers, Output yes or no.