**Sinai University**
**Faculty of Information Technology**
**Computer Programming**
**Loops (Single)**

1) Write a program to read n integers and compute the sum.
2) Write a program to read some even integers and compute the average.
3) Write a program to read n integers and compute the range. $Range = max - min$
4) Write a program to read some integers until the user entered 777 and count the number of entered numbers
5) Write a program to read two integers ( x and y ) and print all numbers between those numbers
6) A number is called perfect if it is equal to the sum of its factors (excluding itself باستثنائه هو). For example, 6 is perfect because 6=1+2+3. Write a program to read a positive integer and check whether it is perfect or not.
7) Write a program to read an integer and compute the sum of the squares of its digits.
8) Write a program to read an integer and revers it.
9) An Armstrong number is a special kind of number in math. It's a number that equals the sum of its digits, each raised to a power n where n is the number of digits. For example, if you have a number like 153, it's an Armstrong number because 1^3 + 5^3 + 3^3 equals 153. 1634 is an Armstrong number because 1^4+6^4+3^4+4^4=1634. Write a program to read an integer and check whether it is Armstrong or not.
10) Write a program to perform a simple calculator. The program will continue to read two numbers and an operation (+, -, *, /) and perform that operation while the user wants to continue.
11) For a positive float x (less than 1), write a program to compute the sum of n terms of the following

$$x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} \dots \dots$$

12) For a float x, write a program to compute the sum of n terms of the following

$$\frac{x^4}{2} + \frac{x^8}{5} + \frac{x^{16}}{8} \dots$$

13) For a float x, write a program to compute the sum of n terms of the following

$$\frac{x^3}{3} - \frac{x^5}{5} + \frac{x^7}{7} - \cdots \dots$$

14) Write a program to compute the following

$$\frac{1}{30} + \frac{2}{29} + \frac{3}{28} + \frac{4}{27} + \cdots \cdot \cdot \frac{30}{1}$$

15) Write a program to compute the following

$$\frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \frac{4}{5} + \cdots \cdot \cdot \frac{99}{100}$$

16) Write a program to compute the sum of n terms of the following series

$$9 + 99 + 999 + 9999 + 99999 + \ldots$$

17) Write a program to compute the sum of n terms of the following series

$$3 + 7 + 33 + 77 + 333 + 777 + 3333 + 7777 + \ldots\ldots$$

18) Write a program to read an integer and check whether it is prime or not.

19) Write a program that reads integers with different signs, adds them, and stops when two integers with the same sign are entered

20) Write a program to read n integers and compute the max of the even integers

21) Write a program to program to read an integer x. Compute the number of digits in x and store it in n. Construct y by concatenating x for n times.

    Example:

    If x= 3152 then n= 4 and y=3152315231523152.

    If x= 517 then n=3 and y=517517517

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