

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

1. Write a C++ program to calculate the sum of the first n natural numbers that are divisible by 7 but not by 63.
 2. Write a C++ program to multiply two rectangular matrices (Check whether the dimensions agree).
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

1. Write a C++ program to calculate the factorial of a non-negative integer.
 2. Write a C++ program to check whether the given square matrix is upper triangular, lower triangular or diagonal, or symmetric.
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

1. Write a C++ program to calculate the sum of the Taylor series of e^x . Get x and n as input. (Get input from the user which one does he/she like to check. Use if ... else. Use math functions from math.h library such as $\exp(x)$ to check the accuracy of your calculations.
 2. Write a C++ program to get two matrices (A and B), add (A+B), subtract (A-B), and scalar multiply kA.
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

1. Write a C++ program to calculate the sum of the Taylor series of the $\sin(x)$. Get x and n as input. (Get input from the user which one does he/she like to check. Use if ... else. Use math functions $\sin(x)$ from cmath library to check the accuracy of your calculations.
 2. Write a C++ program to get two matrices (A and B), add (A+B), subtract (A-B), and scalar multiply kA.
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

1. Write a C++ program to calculate the sum of the Taylor series of the $\cos(x)$. Get x and n as input. (Get input from the user which one does he/she like to check. Use if ... else. Use math functions $\cos(x)$ from cmath library to check the accuracy of your calculations.
 2. Write a C++ program to get two matrices (A and B), add (A+B), subtract (A-B), and scalar multiply kA.
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

Definition: For a positive integer k , the sum of divisors is defined as

$$\sigma(k) = \sum_{d|k} d.$$

Examples: $n = 6 \implies \sigma(1) = 1, \sigma(2) = 3, \sigma(3) = 4, \dots, \sigma(6) = 12$

1. Write a C++ program to compute and print the sum of divisors of numbers from 1 to n , where n is an input given by the user.
 2. Write a C++ program to find the sum of all array of elements
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

1. Write a C++ program to implement the following Euclid's Algorithm using a for or while loop

Euclid's Algorithm:

$$\gcd(a, b) = \begin{cases} b, & \text{if } a \bmod b = 0, \\ \gcd(b, a \bmod b), & \text{otherwise.} \end{cases}$$

2. Write a C++ program to sort an array in ascending order and descending order.
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

Definition: For a positive integer k , the sum of divisors is defined as

$$\sigma(k) = \sum_{d|k} d.$$

Examples: $n = 6 \implies \sigma(1) = 1, \sigma(2) = 3, \sigma(3) = 4, \dots, \sigma(6) = 12$

1. Write a C++ program to compute and print the sum of divisors of numbers from 1 to n , where n is an input given by the user.
 2. Write a C++ program to find the maximum of an array of elements
-

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
DEPARTMENT OF MATHEMATICS AND STATISTICS

Class Test - 3	MA517M-Basic Programming Laboratory	29 August 2025
Name		Roll No.: MA25M

Definition: For a positive integer k , the sum of divisors is defined as

$$\sigma(k) = \sum_{d|k} d.$$

Examples: $n = 6 \implies \sigma(1) = 1, \sigma(2) = 3, \sigma(3) = 4, \dots, \sigma(6) = 12$

1. Write a C++ program to compute and print the sum of divisors of numbers from 1 to n , where n is an input given by the user.
 2. Write a C++ program to find the minimum of an array of elements
-