

## Day 6 - Programs at Bootcamp

### Section A - Elements of Programing :- Condition, Loops and Logical Programming

1. Write a program that takes a range of number as input and outputs the Prime Numbers in that range.
2. Write two programs Sin.java and Cos.java that compute sin x and cos x using the Taylor series expansions as shown below...

Note - Convert angle x to an angle between -2 PI and 2 PI using following logic

$x = x \% (2 * \text{Math.PI});$

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \dots$$

## Day 6 - Programs at Home

### Section A - Elements of Programing :- Condition, Loops and Logical Programming

1. Write a program RollDie.java that generates the result of rolling a fair six-sided die (an integer between 1 and 6). Repeat the Die Roll n times and suggest which number between 1 and 6 fall maximum number of times.
2. Given an array with 100 integers containing 1 to 100 and among them one number is repeated twice. Write the Logic to find out the repeated number.