Lab Session #1

Title: Basic Mathematics Using Python

Aim: To Learn Basic Python And Develop Programs To Solve The Given Mathematical Problems.

Problem Definition: Develop Python Programs To:

1. Convert Degrees To Radians And Vice Versa.
2. Calculate The Arc Length Of An Angle
3. Find Out If The Given Number Is Abundant. Note: In Number Theory, An Abundant Number Or Excessive Number Is A Number For Which The Sum Of Its Proper Divisors Is Greater Than The Number Itself. The Integer 12 Is The First Abundant Number. Its Proper Divisors Are 1, 2, 3, 4 And 6 For A Total Of 16.
4. Print The First N Lucky Numbers.
   Lucky Numbers Are Defined Via A Sieve As Follows.
   Begin With A List Of Integers Starting With 1 :
   1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, ...
   Now Eliminate Every Second Number :
   1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, ...
   The Second Remaining Number Is 3, So Remove Every 3rd Number:
   1, 3, 7, 9, 13, 15, 19, 21, 25, ...
   The Next Remaining Number Is 7, So Remove Every 7th Number:
   1, 3, 7, 9, 13, 15, 21, 25, ...
   Next, Remove Every 9th Number And So On.
   Finally, The Resulting Sequence Is The Lucky Numbers.
5. find the roots of a quadratic function.