********************************WEDDLE'S RULE*********************

PROBLEM NO:09   **DATE:06/04/2023**

ROLL NO:1120

STATEMENT OF THE PROBLEM:

Compute the value of the following integral correct to 5D by Weddle's Rule rule using 13 ordinates:

$$\int_{5°}^{20°} \frac{x^3 + cosbx}{\sqrt{cos^4x + bsin^4x}} dx$$

Here b=0.1 $+ \frac{R}{10}$, where R denotes the last digit of your roll number.

WORKING RULE: **WEDDLE'S RULE**

Composite Weddle's rule for 13 ordinates :

$$I_W^C = \frac{3h}{10}[(y_0 + y_{12}) + 5(y_1 + y_5 + y_7 + y_{11}) + (y_2 + y_4 + y_8 + y_{10}) + 6(y_3 + y_9) + 2y_6)]$$

where h is the width of each subinterval and y_i is the ordinate at $x_i = x_0 + ih$, (i=0,1. .. ,12).

RESULT:

$I_W^C =$ (correct up to 5 decimal place).

SIGNATURE OF THE TEACHER