

S D M College of Engineering & Technology, Dharwad
Department of Mathematics
Mathematics-II (Python LAB)
List of Programs (CSE- STREAM)

1. Write a Python program to evaluate the integral $\int_0^3 \int_0^{3-x} \int_0^{3-x-y} (xyz) dz dy dx$.

2. Write a Python program to find the area of an ellipse by double integration $A = 4 \int_0^a \int_0^{(b/a)\sqrt{a^2-x^2}} dy dx$.

3. Write a Python program to obtain a root of the equation $x^3 - 2x - 5 = 0$ between 2 and 3 by Regula falsi method. Perform 5 iteration.

4. Write a Python program to evaluate $\int_0^6 \frac{1}{1+x^2} dx$ using Simpson's 3/8th rule.

5. Write a python program to apply the Runge Kutta method to find the solution of $\frac{dy}{dx} = 1 + \left(\frac{y}{x}\right)$ at $y(2)$ taking $h = 0.2$. Given that $y(1) = 2$.

6. Write a python program to find gradient of $\phi = x^2 yz$.

7. Write a python program to calculate $\beta(5/2, 7/2)$ and $\Gamma(5/2)$.

8. Write a python program to find the dimension of subspace spanned by the vectors $(1,2,3)$, $(2,3,1)$ and $(3,1,2)$.