

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

## The 1<sup>st</sup> Task

# Survey on Integral Calculus

### Main Title

Integral Calculus and its Importance in Our Real Life.

### Research Requirements

1. What is Integral Calculus, including :
  - 1.1 Relation to Differential Calculus.
  - 1.2 Types of integration.
  - 1.3 Classifications of each type.
  - 1.4 Techniques of solutions of each class.
  - 1.5 Limitations of Analytical Solutions, and use of Numerical Solutions.
  - 1.6 What are the Computer Packages for Numerical Solutions? When it is essential to use it? Clarify with robust examples?
2. Why it is important to be studied, related to other courses?
3. How it is applied to Our Real Life?

# The 2<sup>nd</sup> Task

## Survey on Coordinate Systems (Planar & Spatial)

### Main Title

Different Coordinate Systems in Plane and Physical Space.

### Research Requirements

1. What is a coordinate system, including:
  - 1.1 Complete Description of each system.
  - 1.2 In between Relations (Planar & Spatial).
  - 1.3 Equations of Famous Curves/Surface expressed in each system, and the other systems.
  - 1.4 When it is preferred to use a specific system? Clarify with robust examples?
2. Why it is important to be studied, related to other courses?
3. How it is applied to Our Real Life?