WEEK 7

CHAPTER THREE

- Transformation of Coordinates

OUTLINE

- Cartesian and Polar coordinate
- Introduction to 3D coordinate system
- Polar, Cylindrical and Spherical Coordinates

POLAR COORDINATE

Polar Coordinate is a different system i.e. previously we were talking about Cartesian

So what does that mean????.....

POLAR COORDINATE VS CARTESIAN

EXAMPLE

EXAMPLE

CONVERTING POINTS

EXAMPLE

EXAMPLE

POLAR EQUATION

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

CONVERTING EQUATIONS

EXAMPLE

EXAMPLE

QUICK SUMMARY

- Cartesian coordinate vs Polar coordinate
- Plotting points in polar coordinates
- Converting coordinates between systems
- Polar equations: Spiral, circles, limacons and roses
- Converting equations between systems

POLAR COORDINATE

EXAMPLE

EXAMPLE

EXAMPLE

SLOPES IN POLAR COORDINATE*

EXAMPLE

AREA IN POLAR COORDINATES*

EXAMPLE

PARAMETRIC EQUATIONS (EXAMPLE)*

CALCULUS WITH PARAMETRIC EQUATION (EXAMPLE)*

EXAMPLE

LENGTH OF A CURVE GIVEN BY PARAMETRIC EQUATIONS

CUTOFF FOR MIDTERM

- Introduction to 3D coordinate system
- Polar Coordinate
- Cylindrical Coordinate
- Spherical Coordinate

INTRODUCTION TO 3D COORDINATE SYSTEM

3D SPACE

EXAMPLE

RECALL POLAR AND CARTESIAN COORDINATES

EXAMPLE

POLAR AND CARTESIAN CONVERSION

CYLINDRICAL COORDINATES IN 3D

CONVERTING BETWEEN CYLINDRICAL AND CARTESIAN

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

SPHERICAL COORDINATES IN 3D

CONVERTING OF TO AND FROM SPHERICAL

EXAMPLE

EXAMPLE

SUMMARY QUESTIONS

- Cylindrical to cartesian
- Cartesian to cylindrical
- Spherical to cartesian
- Cartesian to spherical
- Cylindrical to spherical
- Spherical to Cylindrical

EXAMPLE

EXAMPLE

EXAMPLE

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