WEEK 9/10

CHAPTER FOUR

- The Conics and Locus Problems

OUTLINE

- Circle
- Ellipses

THE EQUATION OF A CIRCLE CENTERED AT THE ORIGIN

GENERAL EQUATION OF A CIRCLE

EXAMPLE

- Write down the distance d_1 and d_2 from the origin of the points with coordinates (4,2) and (-1,1) respectively. Generalize the result to obtain the distance d from the origin of any arbitrary point with coordinates (*x*,*y*)

CIRCLES WITH CENTRE AT THE ORIGIN

EXAMPLE

EXAMPLE

EXAMPLE

EXPANDING OF A CIRCLE

COMPLETING THE SQUARE

CIRCLES AND FUNCTIONS

ANNULI BETWEEN CIRCLES

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

THE EQUATION OF A TANGENT TO A CIRCLE AT A GIVEN POINT

EXAMPLE

CIRCLE OF PROPERTIES

INTERSECTION OF A LINE AND A CIRCLE

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

EXAMPLE

PARAMETRIC EQUATION OF A CIRCLE

- Trigonometric Parametric Equation
- Algebraic Parametric Equation

EXAMPLE

EXAMPLE

ELLIPSES

STANDARD FORM OF EQUATION OF AN ELLIPSE

GRAPHING AN ELLIPSE CENTERED AT THE ORIGIN

FINDING THE EQUATION OF AN ELLIPSE FROM ITS FOCI AND VERTICES

TRANSLATION OF ELLIPSE

GRAPHING AN ELLIPSE CENTERED (H,K)

APPLICATION

- A semielliptical archway over a one-way road has a height of 10 feet and a width of 40 feet. Your truck has a width of 10 feet and a height of 9 feet. Will your truck clear the opening of the archway?

ECCENTRICITY

EXAMPLE

SUMMARY