

1.4 Parametric Equations

Relation: A set of ordered pairs, (x, y) of real numbers.

The graph of a relation: is the set of points in the plane that correspond to the ordered pairs of the relation.

***If x and y are functions of a third variable t , called a parameter, then we can use the *parametric mode* of the calculator to obtain a graph of the relation.

Parameter: The variable t . Its domain I is the parametric interval.

Parametric Equations: $x = f(t), y = g(t)$

Parametric Curve: If x and y are given as functions

$$x = f(t), y = g(t)$$

Over an interval of t -values, then the set of points $(x, y) = (f(t), g(t))$ makes the parametric curve.

If I is a closed interval $a \leq t \leq b$, the point $(f(a), g(a))$ is the initial point of the curve and the point $(f(b), g(b))$ is the terminal point of the curve.

Parametrized: the curve is parametrized when there are parametric equations and a parametric interval for the curve.