Polar Coordinates and Functions Key Words

Polar Coordinates Lesson

polar axis – in polar coordinates, the horizontal ray going through the pole marking the initial side of the rotation of θ

polar coordinates – the ordered pair (r, θ) where r is the distance from the pole and θ is the direction as marked by rotation from the polar axis

polar coordinate system – a two-dimensional coordinate system in which the location of a point is determined by its distance from the origin and its angular distance from the positive horizontal axis

pole – in polar coordinates, the fixed point from which the distance of the point (r, θ) in polar coordinates is determined

radial line – line that goes through the pole

Polar Equations Lesson

polar equation – equation in which the variables are r and θ

Graphs of Polar Equations Lesson

graph of a polar equation – the set of all points whose polar coordinates satisfy the equation

Conic Sections in Polar Coordinates Lesson

eccentricity – a quantity for a conic section that represents the ratio of the distance between P and the focus to the distance between P and the directrix where P is any point (r, θ) on the conic section.

Limaçons Lesson

cardioid – a heart shaped curve in the polar coordinate system

limaçons – the group of polar curves distinguished by their dimpled or heart shape

Rose Curves and Lemniscates Lesson

lemniscate – a closed plane curve consisting of two symmetrical loops meeting at a node

Complex Numbers in Polar Form Lesson

argument – the angle θ, measured in a counterclockwise direction, from the positive real axis to the ray that starts at the origin and passes through the point representing $z = a + bi$

imaginary axis – the vertical axis in the complex plane

modulus – the distance the point representing the complex number $z = a + bi$ is from the pole, represented by r

real axis – the horizontal axis in the complex plane