

## 12.3: Calculus in Polar Coordinates

**Learning Objectives.** Upon successful completion of Section 12.3, you will be able to...

- Answer conceptual questions involving calculus in polar coordinates.
- Find the slope of the line tangent to a polar curve at a given point.
- Find the points at which a polar curve has horizontal or vertical tangent lines.
- Find intersection points for two polar curves.
- Find the area of a region bounded by polar curves.
- Find the lengths of polar curves.

**Title**