POD

POD 1.1

A weather satellite orbits the earth in a circular orbit 500 miles above the earth’s surface. What is the radian measure of the angle (measured at the center of the earth) through which the satellite moves in traveling 600 miles along its orbit? (The radius of the earth is 3960 miles)

POD 1.2

The name “tangent” is derived from the use of the word tangent in geometry. Draw a unit circle with a tangent line, tangent at the point A (1,0). In the circle, draw an angle,$θ$, in the first quadrant. Prove that QA = tan$θ$

POD 1.3

An ant starts at point (1,0) on the unit circle and walks counterclockwise a distance of 3 units around the circle. Find the x and y coordinates (nearest hundredth) of the final location of the ant.

POD 1.4

Two airplanes leave Kennedy Airport at 11 am. The air traffic controller reports that they are traveling away from each other at an angle of 103 degrees. The DC-10 travels 509 mph and the L-1011 travels at 503 mph. How far apart are they at 11:30 am?

POD 1.5

A parcel of land is in the shape of an isosceles triangle. The base has a length of 425 ft.; the other sides, which are of equal length, meet at an angle of 39 degrees. How long are they?