Exercise One for GSDM Seminar

Name: _____

Date: _____

Geometry of Meridian Ellipse – Helpful equations, www.globalcogo.com/geodesy.pdf

I. List two commonly used figures of the earth in addition to the Geodetic Reference System of 1980 (GRS80).

   a.

   b.

II. The parameters for the GRS80 are: a = 6,378,137.000 meters and 1/f = 298.25722210088. Compute the following geometrical elements and show minimum of 10 significant figures.

   a. Eccentricity squared, e^2 =

   b. Semi-major axis, b =

   c. Polar radius of curvature, c =

III. Other geometrical elements depend upon knowing the geodetic latitude. Use a geodetic latitude of 35° 16' 43."55643 to compute:

   a.   The length of the ellipsoid normal, N =

   b. The X value on the ellipsoid for a zero ellipsoid height (h = 0.0 m), X =

   c. The value of Z on the ellipsoid for a zero ellipsoid height (h = 0.0 m), Z =

IV. What is the most confusing part of this exercise?