Assignment

1. What are the two distortions going from a 3D earth model to a 2D grid system?

2. What is the *deflection of the vertical*?

3. What is the maximum ellipsoid-to-grid distortion for the following grid systems

    State Plane _____   Universal Transverse Mercator _____

4. What are the types of projection surfaces used for the State Plane Coordinate systems?

5. What NGS product can be used to convert coordinates between different systems.

6. What is the *LaPlace Correction*?

7. True or False: A State Plane grid distance will always be shorter than its horizontal ground counterpart.

8. What force(s) define the geoid?

9. True or False Grid scale on a UTM projection varies East-West

10. True or False Convergence on a UTM projection varies East-West

11. What is the geoid height at 45°24'30.56"N Lat and 91°16'22.21"W Long?

12. The horizontal ground distance and geodetic azimuth from NSRS point *Jerry* (PID NH0936) to a survey point are 1289.02 ft and 323°45'11", respectively. What are the grid distance and grid direction for the line in the State Plane Coordinate Wis South Zone? Use *Jerry*'s heights.

13. The Idaho West State Plane coordinates of a survey point are 2, 087,320.19 ft East and 2,488,602.36 ft North. What are the convergence and grid scale factor at the point?

14. True or False Geodetic meridians are parallel.