



DESCRIPTION: Participants will respond to interpretative map questions based on one or more state highway maps or a road atlas, and one or more USGS topographic maps. Maps and quads may be from one or more states. The event will be presented in a storyline format.

EVENT PARAMETERS: Participants must bring a protractor, ruler, and a map symbol sheet to the event. Students may bring a calculator, notes, reference materials, and other measuring devices (e.g., Geo-Ruler, Navigational Protractor, etc.). The event supervisor has the option to provide protractors, rulers, symbol sheets, and string. Participants may not have access to outside reference sources such as the Internet.

A TEAM OF UP TO: 2 **APPROXIMATE TIME: 50 Minutes**

THE COMPETITION: The event supervisor will provide all required maps, question booklets, and answer sheets. The event supervisor will inform participants when they may begin.

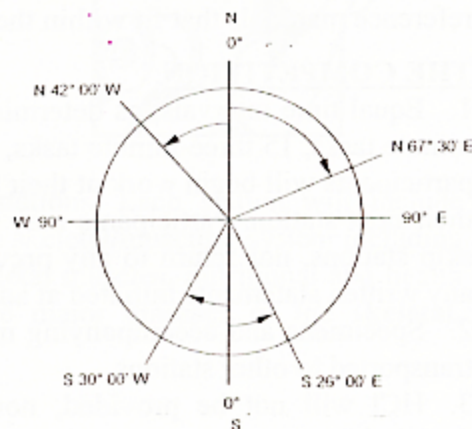
Question areas for topographic maps may include:

1. Map location/series/scale/index/legend
2. Marginal information
3. Interpreting contours
4. Magnetic declination
5. Locating and interpreting of map symbols
6. Locating and interpreting of map features
7. Survey control marks (**control stations and spot elevations**)
8. Azimuths and bearings
9. *Determining stream gradient (feet per 1000 feet)
10. Determining distances between features (**English and Metric units**)
11. Geographic coordinates of features and symbols (degrees, minutes, seconds)
12. Public Land Survey System (PLSS)
13. Determining the elevation of features and symbols
14. *Determining slope (feet per 100 feet)
15. Use of Sector Reference System**
16. Determining direction of stream flow
17. *Profiles

*Areas with an * should be less difficult for regional exams.

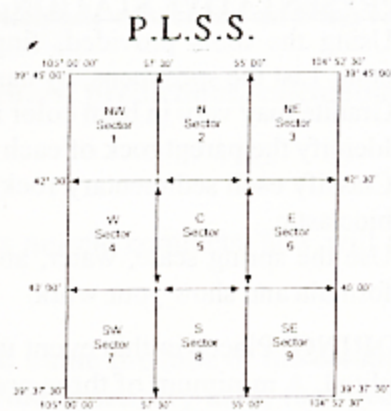
Question areas for highway maps:

1. Determining distances between features
2. Map legend/tables/index
3. Map grid system
4. Locating and interpreting map symbols
5. City and regional inserts



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19	20	21	22	23	24	T 2 S.
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**Sector Reference System

SCORING: Teams will be ranked based upon their point total. Values of questions may be weighted. A minimum of three pre-identified questions will serve as tiebreakers.

***NOTE:** Sector Ref. System is a method by which a map can be divided into nine parts. On topographic maps the graticule tick marks, divide 7.5 min. quad maps into 2.5 x 2.5 minute blocks of latitude and longitude, which define sectors. The Public Land Survey System is printed on USGS 7.5 minute quad maps in most states except the 18 colonial system states, Hawaii and Texas. PLSS is used for land descriptions by many professions and is a positive quick reference land identification system **National Science Education Standards:** Science as Inquiry, Content Standard A: Use appropriate tools and techniques to gather, analyze, and interpret data.