

# TRIG★STAR



**What is Trig-Star?** It is a high school mathematic competition based on the practical applications of Trigonometry. Students that participate not only earn awards, but come away with a better understanding of a technical profession such as Land Surveying and Mapping. Professional Surveyors utilize the Trig-Star program to advance communication with the communities they serve.

The Trig-Star Program builds an awareness of Land Surveying as a profession among mathematically skilled high school students, career guidance counselors, and high school math teachers. Civil Engineering and Land Surveying companies provide professionals who volunteer their time to explain how trigonometry is used to solve Land Surveying and Mapping problems.

A Trig-Star is a trigonometry student who has demonstrated in competition that he or she is the most superiorly skilled at each high school in the practical application of trigonometry. The winner is the Trig-Star of their high school and depending on their score, they may also be declared the State Trig-Star. Besides the state title, the State Trig-Star and their high school math teacher win cash prizes. State Trig-Stars may also compete for the national title and win bigger prizes for both the student and the teacher.

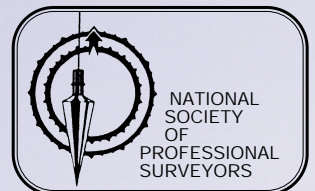


Trig-Star is a national education and scholarship program supported by the Wisconsin Society of Land Surveyors and the National Society of Professional Surveyors. Contact your local Trig-Star Program Sponsor for additional information.



## WISCONSIN SOCIETY OF LAND SURVEYORS

2935 Coventry Lane  
Waukesha, Wisconsin 53188  
Phone: 262-549-1533  
Fax: 262-549-1656  
email: hscwsls@aol.com  
Website: www.wsls.org



## Example Trig-Star Problem

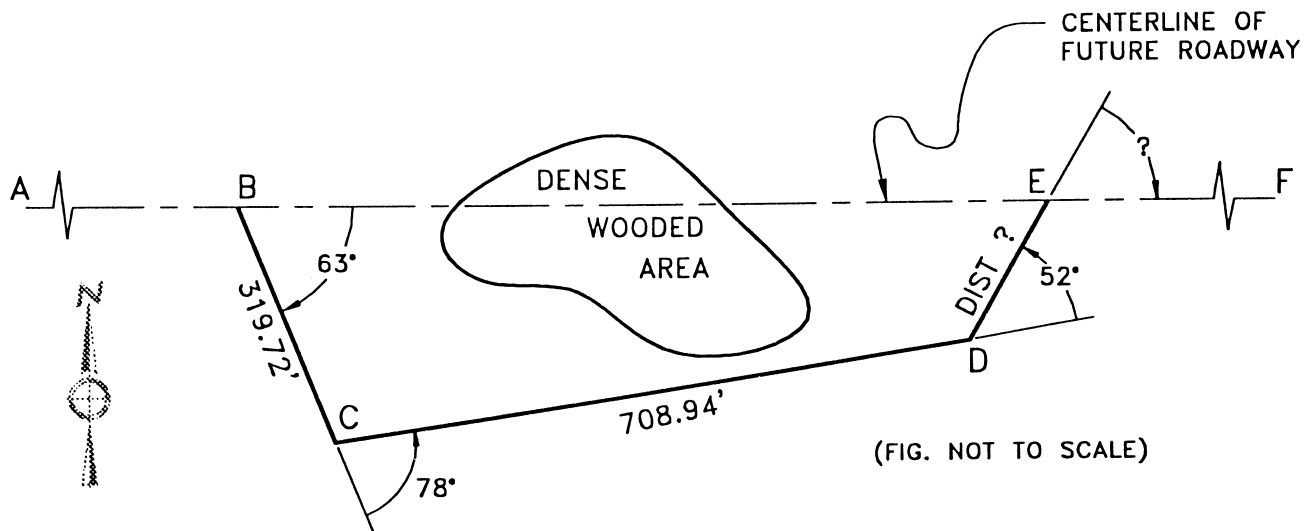
During the initial planning of a new roadway, a surveyor was asked to layout the straight line "AF" shown in the figure below. However, while laying out line "AF" a dense wooded area along the line of sight was encountered. The surveyor decided to make a few measurements to go around the obstruction. The angles and distances measured by the surveyor are shown in the figure below.

Determine the distance "DE" that the surveyor will need to measure out to get back to the straight line at point "E".

Determine the angle that the surveyor will need to turn at point "E" to get back onto the straight line "AF".

Determine the distance "BE" along the straight line that was bypassed.

To be turned at "E" to get back on line.



Express distances to the nearest 0.01 ft.  
and the angle to the nearest second

- Distance "DE" = \_\_\_\_\_
- Angle at "E" = \_\_\_\_\_
- Distance "BE" = \_\_\_\_\_