

Solutions to Triangulation and Trilateration Problems

Civil Engineering Licensure Exam – Mock Exam (Day 11)

February 25, 2025

Solutions

1. **Problem:** Calculate the position of a point using triangulation, given two known points and the angles subtended at these points.
Solution: Triangulation Surveying-Part 1
2. **Problem:** Determine the coordinates of a point using trilateration, given the distances from three known points.
Solution: How to Locate a Point Using Trilateration Surveying?- Part 2
3. **Problem:** Explain the differences between triangulation and trilateration in surveying.
Solution: Triangulation Surveying-Part 1
4. **Problem:** Solve a resection problem to find the location of an unknown point by measuring angles from three known points.
Solution: Triangulation Surveying-Part 1
5. **Problem:** Calculate the area of a triangle formed by three known points using their coordinates.
Solution: Triangulation Surveying-Part 1
6. **Problem:** Determine the most probable position of a point using observations with different weights.
Solution: Triangulation Surveying-Part 1
7. **Problem:** Compute the adjusted coordinates of points in a trilateration network after a least squares adjustment.
Solution: How to Locate a Point Using Trilateration Surveying?- Part 2
8. **Problem:** Describe the process of establishing a control network using triangulation methods.
Solution: Triangulation Surveying-Part 1

9. **Problem:** Explain how electronic distance measurement (EDM) has impacted trilateration techniques.
Solution: How to Locate a Point Using Trilateration Surveying?- Part 2
10. **Problem:** Solve a problem involving the calculation of angles and distances in a triangulation network with given baseline length.
Solution: Triangulation Surveying-Part 1