

# Solutions to Surveying Problems

Civil Engineering Licensure Exam – Mock Exam (Day 13)

February 25, 2025

## Solutions

- 1. Problem:** Calculate the actual ground distance represented by 5 cm on a map with a scale of 1:2000.

**Solution:** Finding the actual area on a map using map scales
- 2. Problem:** Determine the latitude misclosure in a closed traverse with given latitudes and departures.

**Solution:** How to calculate the latitudes and departures of a closed traverse
- 3. Problem:** Compute the adjusted coordinates of traverse stations after correcting for angular misclosure.

**Solution:** Traverses, Angular Misclosure, and Departures/Latitudes
- 4. Problem:** Explain the process of converting map distances to real-world distances using map scales.

**Solution:** Finding the actual area on a map using map scales
- 5. Problem:** Calculate the departure misclosure in a traverse and adjust the departures accordingly.

**Solution:** How to calculate the latitudes and departures of a closed traverse
- 6. Problem:** Determine the linear misclosure and relative precision of a closed traverse.

**Solution:** Traverses, Angular Misclosure, and Departures/Latitudes
- 7. Problem:** Describe the method to balance angles in a traverse to minimize angular misclosure.

**Solution:** Traverses, Angular Misclosure, and Departures/Latitudes
- 8. Problem:** Compute the area of a land parcel using the coordinates of its vertices obtained from a traverse.

**Solution:** How to calculate the latitudes and departures of a closed traverse

9. **Problem:** Explain the significance of map scales in representing real-world distances and areas.

**Solution:** Finding the actual area on a map using map scales

10. **Problem:** Calculate the corrected latitudes and departures after adjusting for misclosure in a traverse.

**Solution:** Traverses, Angular Misclosure, and Departures/Latitudes