QUIZ # 1 (20 POINTS)

1. A tape of standard length 20 m at 85°F was used to measure a base line. The measured distance was 882.50 m. The following being the slopes for the various segments of the line: (Segment length (m), Slope) (100, 2°20′) (150, 4°12′) (50, 1°06′) (200, 7°48′) (300, 3°00′) (82.5, 5°10′). Calculate the true length of the line if the mean temperature during measurement was 63°F and the coefficient of thermal expansion of the tape material is 6.5 × 10–6 per °F.
2. Sketch the relation between the geoid, ellipsoid, MSL, and natural ground. Explain the difference between them in terms of datum for elevation, northing and easting coordinates