ANGLERS

I. Reference directions for Vertical Angles
   a. Horizon by plus or minus
   b. Zenith – 0 is directly above the observer
   c. Nadir – 0 is directly below the observer

II. Meridians
   a. Geographic meridian – line on the mean surface of the earth connecting the poles
   b. Magnetic meridian – parallel to the directions taken by freely moving magnetic needles
   c. Grid meridian – lines parallel to a grid reference meridian

III. Horizontal angles
   a. Interior angle – angle measured on the interior of a closed polygon
   b. Deflection angle – measured from the prolongation of the back survey line to the forward line
   c. Angle right – measured from a reference point (backsight) in a clockwise direction

IV. Bearings & Azimuths
   a. Bearing – direction of a line given by the acute angle between the line and a meridian
   b. Azimuth – direction of a line given by an angle measured clockwise from the north end of a meridian
   c. Bearing quadrants – NE, SE, SW, NW
   d. Azimuth quadrants – 1, 2, 3, 4 marked clockwise from north
   e. Bearings to Azimuths
      - NE quadrant – Azimuth = Bearing
      - SE quadrant – Azimuth = 180 – Bearing
      - SW quadrant – Azimuth = 180 + Bearing
      - NW quadrant – Azimuth = 360 – Bearing
   f. Azimuths to Bearings
      - 1st quadrant – Bearing = Azimuth
      - 2nd quadrant – Bearing = 180 – Azimuth
      - 3rd quadrant – Bearing = Azimuth – 180
      - 4th quadrant – Bearing = 360 – Azimuth