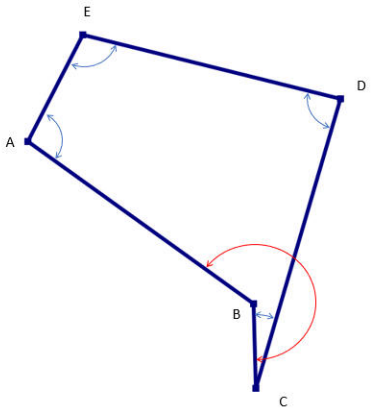
CIVL 1112 – Assignment #11 Name: _____

Objective

The purpose of this assignment is twofold: (1) compute the bearings of a traverse based on survey data and a reference bearing, and (2) develop a spreadsheet to compute the area of the traverse and the *x* and *y* coordinates of the points on a traverse.

You ***must*** submit the cover sheet for the assignment, printouts of your spreadsheet for Parts 1 and 2. Also, submit your spreadsheets for Parts 1 and 2 to Canvas. You must follow the Excel format.

Part 1. A five-sided closed traverse has the following distances in feet: AB = 285.13', BC = 610.24', CD = 720.35', DE = 203.03', and EA = 647.25'. The interior angles are as follows (***measured as angles to the right)***: A = 100° 45' 37", B = 101° 34' 24", C = 89° 03' 28", D = 17° 12' 59", and E = 231° 23' 43". The bearing of AB is N 26° 09' 40" E.



Determine the bearings of each side and then use your traverse spreadsheet to compute the corrected and balanced latitudes and departures for the traverse. Show all work to determine the bearing of each side, following the homework format. See the diagram below to visualize the orientation of the traverse and the location of the interior angles.

Part 2. This workbook should supplement your work from Assignment 10 to include the double meridian distance (DMA), the double area, and the *x- and y-coordinate* calculations. Your traverse workbook will be used in your design for the detention pond project. The workbook should compute latitudes and departures from given bearings and distances, DMDs, and the area of the closed, balanced traverse.

Use your traverse spreadsheet to calculate the latitudes and departures. Balance the latitudes and departures using the compass rule. Then compute the area using DMD and determine the x and y coordinates, assuming point A is located at (3,000, 3,000). Finally, plot the traverse area for the traverse shown below.