Dear students,

Please solve the following problems for Assignment #5 for your next DGD.

1- What is the angular misclosure of a six-sided polygon traverse with observed angles of $98°10'10'', 133°45'58'', 68°23'10'', 182°50'54'', 134°32'02''$, and $102°17'36''$.

2- What FGCS standard would the angular misclosure in the last problem meet.

3- Balance the following interior angles (angles-to-the-right) of a five-sided closed polygon traverse using method 1 of Section 10.2. If the azimuth of side AB is fixed at 122º32'16", calculate the azimuths of the remaining sides. A=105º13'14"; B= 92º36'06"; C= 67º15'22"; D=217º24'30"; E = 57º30'38". (Note: line BC bears NE.)

4- Compute departures and latitudes, linear misclosure, and relative precision for the traverse of the last problem if the lengths of the sides (in feet) are as follows:

AB = 2157.34; BC =1722.58; CD =1318.15; DE =1536.06; and EA = 1785.58 (Note: Assume units of feet for all distances.)

5- Using the compass (Bowditch) rule, adjust the departures and latitudes of the traverse in the last problem. If the coordinates of station A are X = 20,000 ft and Y = 15,000 ft, calculate (a) coordinates for the other stations, (b) adjusted lengths and azimuths of lines AB and DE, and (c) the final adjusted angles at stations A and C.

6- Compute and tabulate for the following closed-polygon traverse: (a) preliminary bearings (b) unadjusted departures and latitudes (c) linear misclosure and (d) relative precision. (Note: line BC bears NE.)

Course	Azimuth	Length (m)	Interior Angle (Right)
AB	179°50′39″	2862.392	A = 120°05'50"
BC		4189.033	*B* = 91°57'50"
CD		3815.353	*C* = 121°44'06"
DE		3645.450	*D* = 82°02'08"
EA		3490.014	*E* = 124°10'11"

7- For the closed-polygon traverses (lengths in feet), compute and tabulate: (a) unbalanced departures and latitudes (b) linear misclosure (c) relative precision and (d) preliminary coordinates, if X_A =10,000.00 and Y_A= 5000.00. Balance the traverses by coordinates using the compass rule.

Course	***AB***	***BC***	***CD***	***DA***
Bearing	N8°17′02″E	N87°02′05″E	S14°47′06″W	N68°43′20″W
Length	403.73	622.63	653.16	550.84

Good luck,