



### Assignment #4

Dear CVG 2171 students,

Please solve the problems below and return them to you TA at the next tutorial session.

1-

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

2- What FGCS standard would the angular misclosure in Problem #1 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  $122^{\circ}32'16''$ , calculate the azimuths of the remaining sides.  $A = 105^{\circ}13'14''$ ;  $B = 92^{\circ}36'06''$ ;  $C = 67^{\circ}15'22''$ ;  $D = 217^{\circ}24'30''$ ;  $E = 57^{\circ}30'38''$ . (Note: line  $BC$  bears NE.)



4-

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)
<i>AB</i>	179°50'39"	2862.392	<i>A</i> = 120°05'50"
<i>BC</i>		4189.033	<i>B</i> = 91°57'50"
<i>CD</i>		3815.353	<i>C</i> = 121°44'06"
<i>DE</i>		3645.450	<i>D</i> = 82°02'08"
<i>EA</i>		3490.014	<i>E</i> = 124°10'11"

5-

For the closed-polygon traverses given (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	<i>AB</i>	<i>BC</i>	<i>CD</i>	<i>DA</i>
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,