

Surveying - Traverse



Homework 11

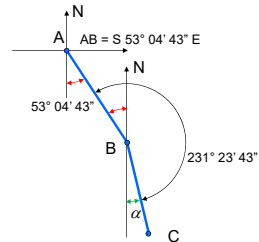
- A four-sided closed field traverse has the following distances in feet: AB = 647.25; BC = 203.03; CD = 720.35; and DE = 610.24; and EA = 285.13.
- The interior angles are as follows (measured as angles to the right): A = 100° 45' 37"; B = 231° 23' 43"; C = 17° 12' 59"; D = 89° 03' 28"; and E = 101° 34' 24".
- The bearing of AB is S 53° 04' 43" E.

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Find the bearing of side BC:



$$\alpha = 180^\circ 00' 00'' + 53^\circ 04' 43'' - 231^\circ 23' 43'' = 1^\circ 41' 00''$$

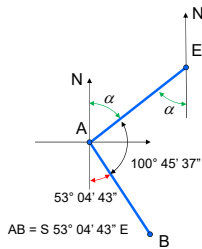
$$\text{BC} = \text{S } 1^\circ 41' 00'' \text{ E}$$

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Find the bearing of side EA:



$$\alpha = 179^\circ 58' 120'' - 100^\circ 45' 37'' - 53^\circ 04' 43'' = 26^\circ 09' 40''$$

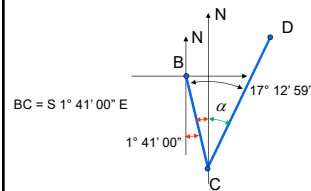
$$\text{EA} = \text{S } 26^\circ 09' 40'' \text{ W}$$

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Find the bearing of side CD:



$$\alpha = 17^\circ 12' 59'' - 1^\circ 41' 00'' = 15^\circ 31' 59''$$

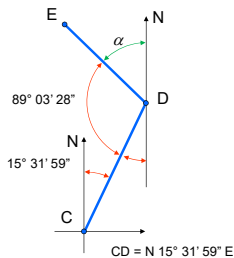
$$\text{CD} = \text{N } 15^\circ 31' 59'' \text{ E}$$

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Find the bearing of side DE:



$$\alpha = 179^\circ 58' 120'' - 89^\circ 03' 28'' - 15^\circ 31' 59'' = 75^\circ 24' 33''$$

$$\text{DE} = \text{N } 75^\circ 24' 33'' \text{ W}$$

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Initial x = 0.00 ft
Initial y = 0.00 ft

Side	Bearing degree minutes seconds	Length (ft)	Latitude	Departure	Balanced		Coordinates	
					Latitude	Departure	x	y
AB	S 53 4 43 E	647.25	-588.615	517.451	-588.839	517.438	0.000	0.000
BC	S 1 41 0 E	203.03	-202.942	3.954	-202.990	3.909	517.458	-388.838
CD	N 15 31 59 E	720.35	604.040	192.906	604.014	192.850	523.388	-691.789
DE	N 75 24 33 W	610.24	153.728	-600.559	153.708	-600.571	716.290	102.225
EA	S 26 9 40 W	285.13	-255.921	-125.713	-255.931	-125.718	125.718	255.931
		2466.00	0.000	0.048	0.000	0.000	0.000	0.000

Enclose = 0.102 ft

Precision = 1/24,156

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Questions?