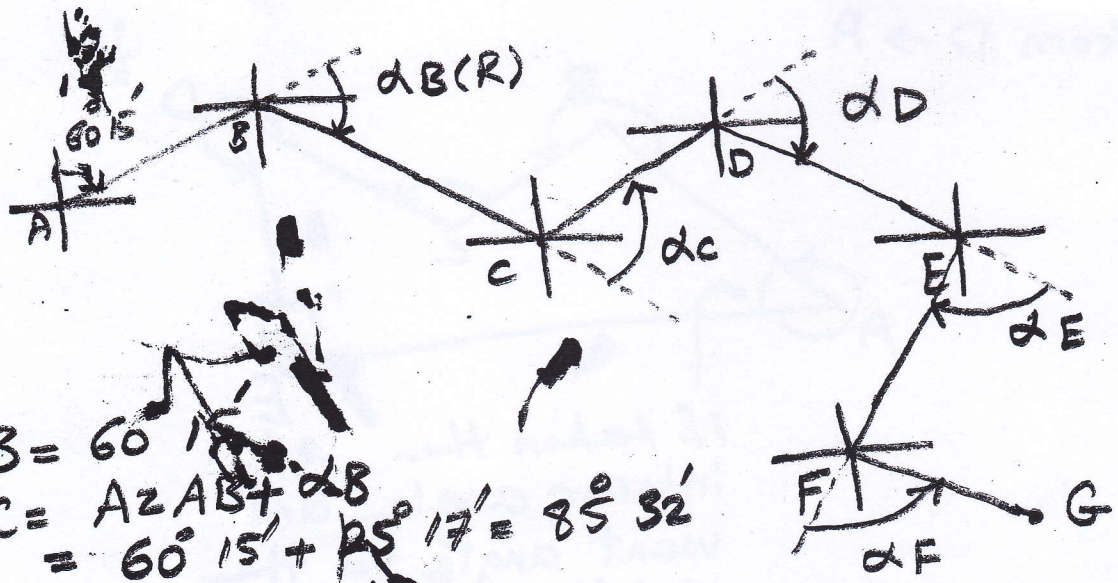
Example/ The deflection angles for the traverse ABCDEFG were taken and illustrated below. Find the real direction for all sides of traverse, if begning of measuring from station A and ending at station G and the side AB was N 60° 15′ E.

station	Deflection angle
B	25° 17′ R
C	12° 19′ L
D	36° 19′ R
E	14° 46′ R
F	02° 47′ L

Sol.



Az AB = 60° 15′

Az BC = Az AB + αB = 60° 15′ + 25° 17′ = 85° 32′

Az CD = Az BC − αC = 85° 32′ − 12° 19′ = 73° 13′

Az DE = Az CD + αD = 73° 13′ + 36° 19′ = 109° 32′

Az EF = Az DE + αE = 109° 32′ + 14° 46′ = 124° 12′

Az FG = Az EF − αF = 124° 12′ − 02° 47′ = 121° 25′

For check

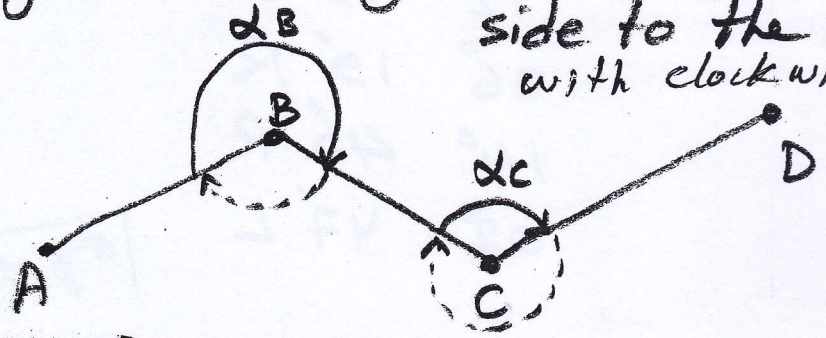
$$Az_{final} - Az_{first} = \Sigma R - \Sigma L$$

$$121^\circ 25' - 60^\circ 15' = (25^\circ 17' + 36^\circ 19' + 14^\circ 40') - (121^\circ 9' + 2^\circ 47')$$

$$61^\circ 10' = 61^\circ 10' \quad \text{o.k}$$

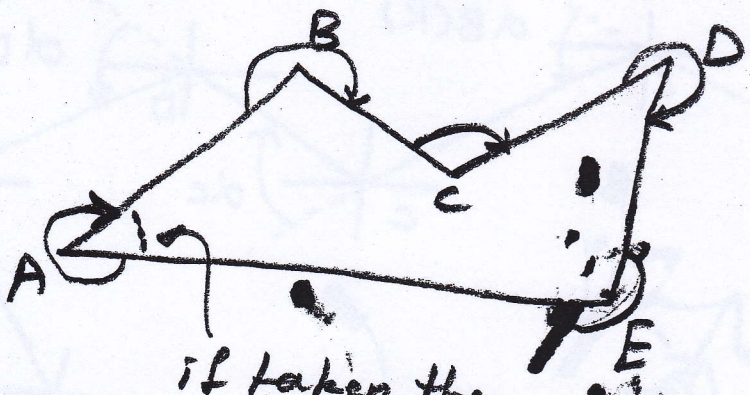
$Az_{next\,side} = Az_{previous\,side} \pm \alpha$ (defl. angle) $\rightarrow +$ (R), $-$ (L)

2. Angle to the right: the angle from previous side to the next side with clockwise.



→ from A→D

⋯→ from D→A



if taken the interior angle and want angle to the right ⇒ 360 − interior angle

Check for closed traverse type polygon

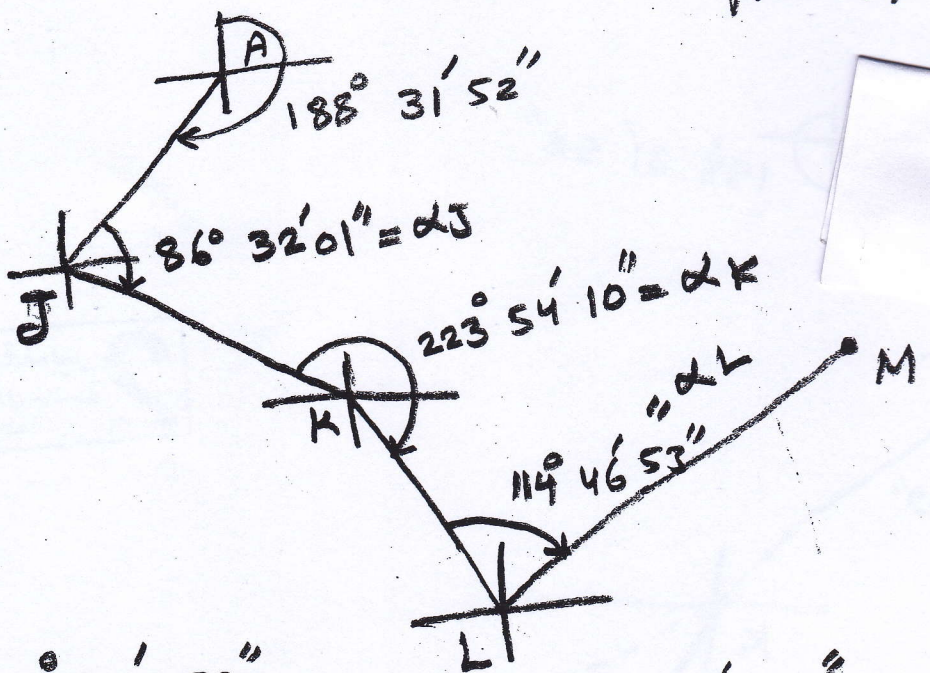
$$Az_{Last} = Az_{first} + [\Sigma \text{ angles to the right}] - [(n-1) * 180^\circ]$$

Example/ The table shown below illustrates the angle to the right for traverse AJKLM. The Az AJ = 188° 31′ 52″. Calculate the bearing for other sides.

Point	angle to the right
J	86° 32′ 01″
K	223° 54′ 10″
L	114° 46′ 53″
M	/

note: the measurement from A → M

Sol.



Az AJ = 188° 31′ 52″

Az JA = 188° 31′ 52″ − 180° = 8° 31′ 52″

Az JK = Az JA + αJ = 8° 31′ 52″ + 86° 32′ 01″ = 95° 3′ 53″

Az KJ = 95° 03′ 53″ + 180° = 275° 03′ 53″

360° − 275° 03′ 53″ = 84° 56′ 07″

Az KL = 223° 54′ 10″ − 84° 56′ 07″ = 138° 58′ 03″

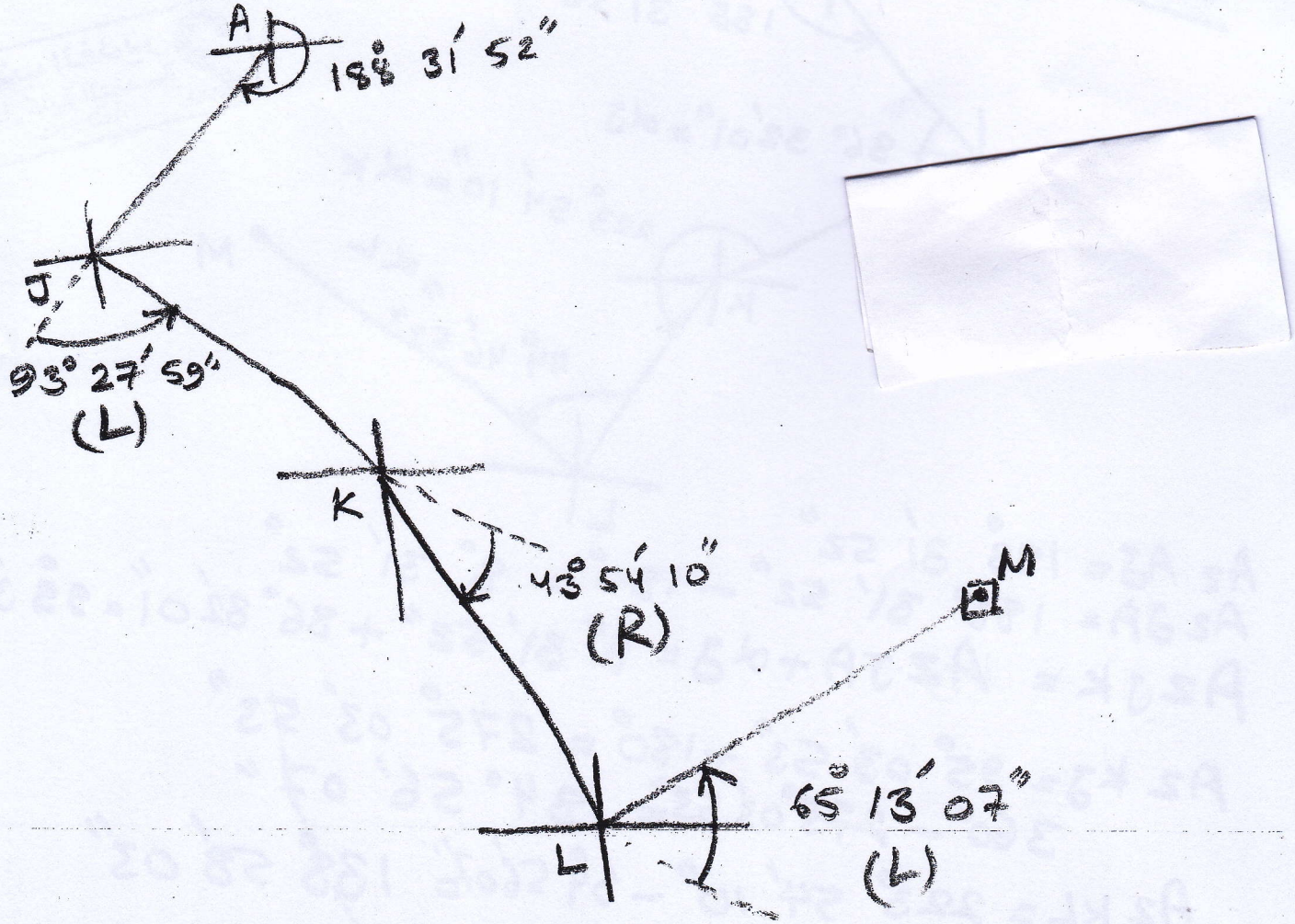
Az LK = 138° 58′ 03″ + 180° = 318° 58′ 03″

360° − 318° 58′ 03″ = 41° 01′ 57″

Az LM = 114° 46′ 53″ − 41° 01′ 57″ = 73° 44′ 56″

If the same reverse and Az Aj same, we take the deflection angles as below

Point	Deflection angle
J	93° 27′ 59″ L
K	43° 54′ 10″ R
L	65° 13′ 07″ L
M	



$Az\ JK = 188^\circ\ 31'\ 52'' - 93^\circ\ 27'\ 59'' = 95^\circ\ 03'\ 53''$

$Az\ KL = 95^\circ\ 03'\ 53'' + 43^\circ\ 54'\ 10'' = 138^\circ\ 58'\ 03''$

$Az\ LM = 138^\circ\ 58'\ 03'' - 65^\circ\ 13'\ 07'' = 73^\circ\ 44'\ 56''$