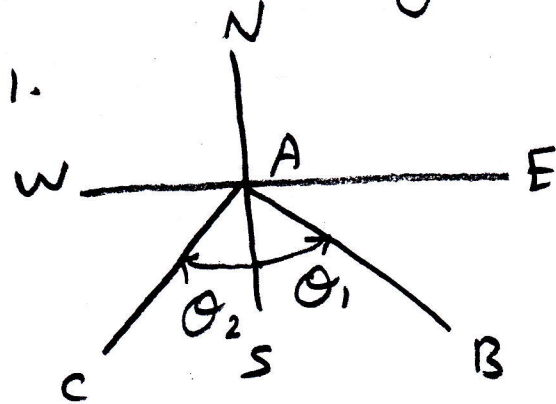


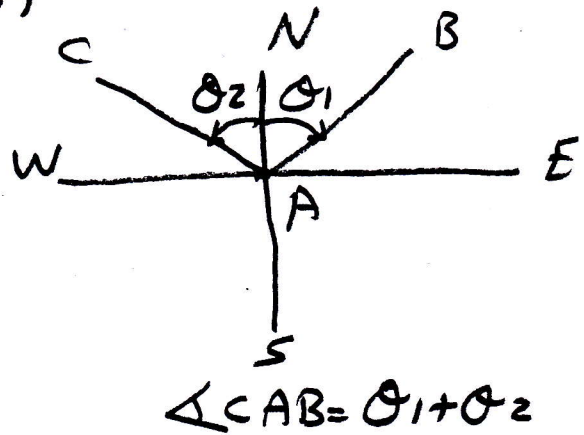
Calculation of included angles:

(9)

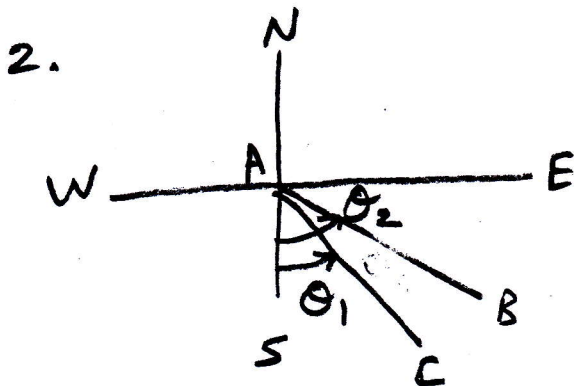
if Given bearing (Q.B)



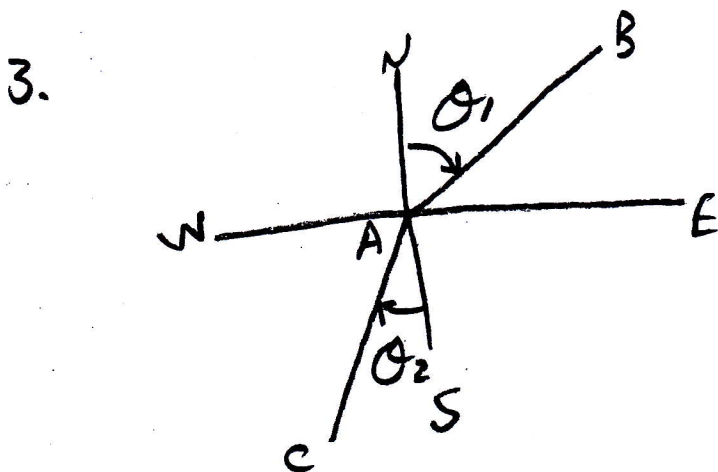
$$\angle CAB = \theta_1 + \theta_2$$



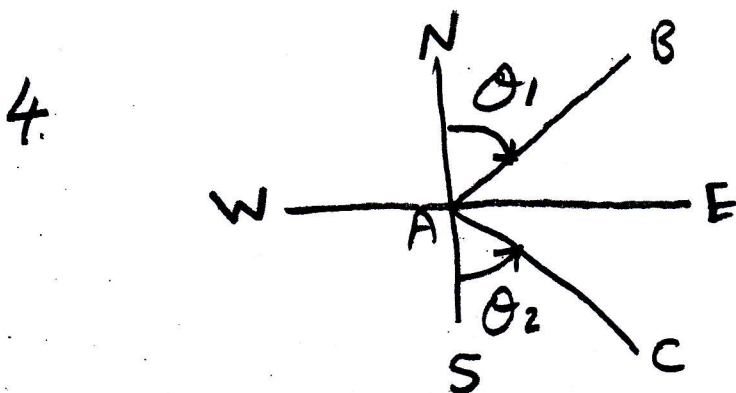
$$\angle CAB = \theta_1 + \theta_2$$



$$\angle CAB = \theta_2 - \theta_1$$



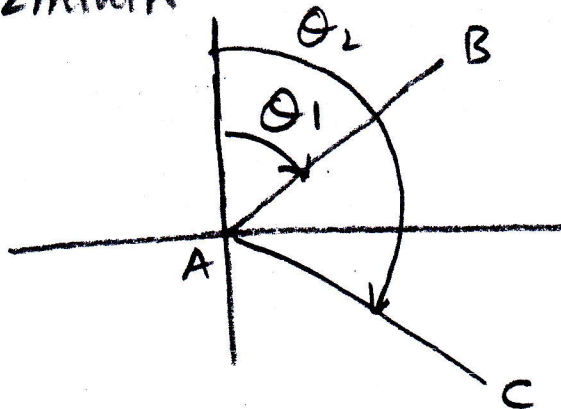
$$\angle CAB = 180^\circ - (\theta_1 - \theta_2)$$



$$\angle CAB = 180^\circ - (\theta_1 + \theta_2)$$

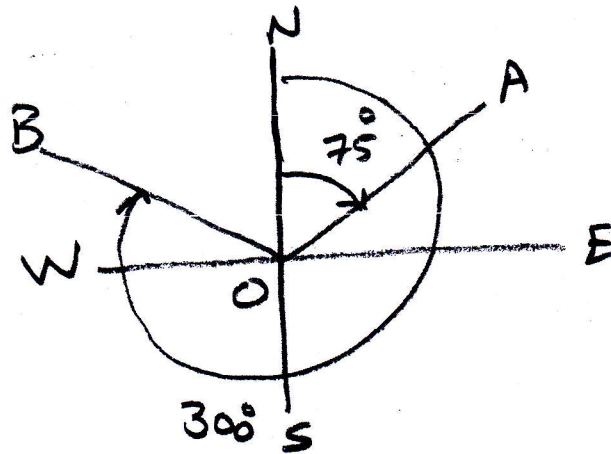
(10)

if Given Azimuth



$$\angle CAB = \theta_2 - \theta_1$$

Example / Calculate the exterior and interior angle of AOB if $OA = 75^\circ 00'$ and $OB = 300^\circ 00'$



$$\text{Exterior} = 300^\circ - 75^\circ = 225^\circ$$

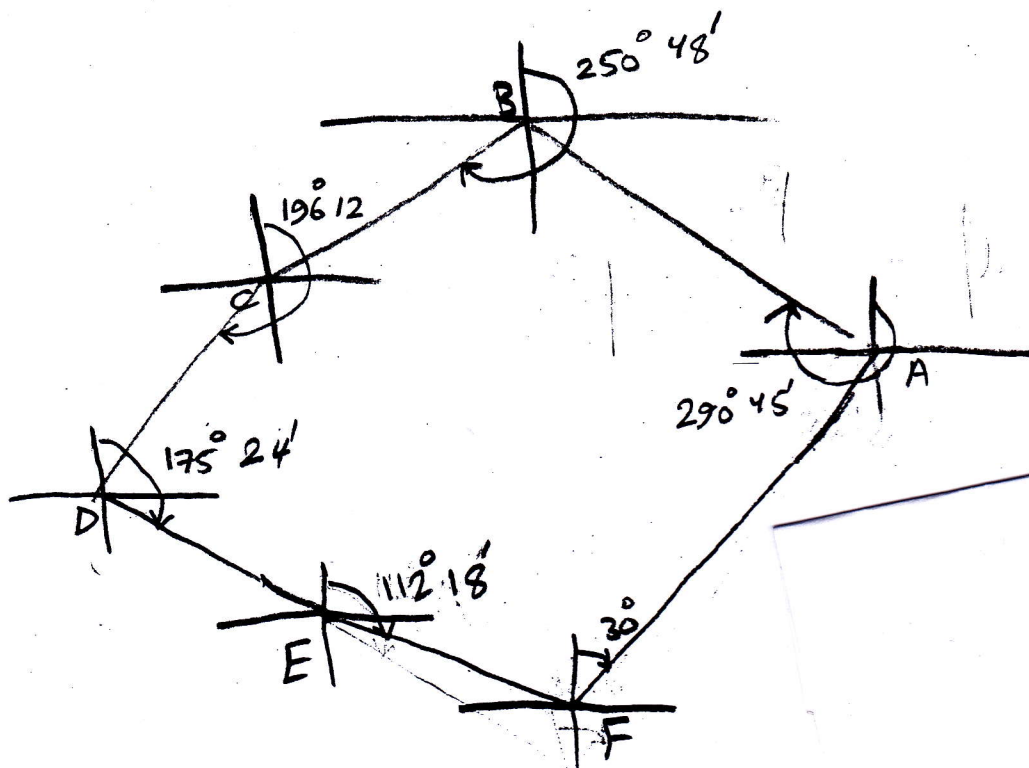
$$\text{Interior} = 360 - 225^\circ = 135^\circ \angle BOA$$

Example/

The traverse with points ABCDEF, the Azimuth for the sides are :

AB = 290° 45' , BC = 250° 48' , CD = 196° 12' , DE = 175° 24' , EF = 112° 18' , FA = 30° 00'

Calculate the interior angles



Azimuth BA = 290° 45' - 180° = 110° 45'
∠B = 250° 48' - 110° 45' = 140° 03'

Azimuth CB = 250° 48' - 180° = 70° 48'
∠C = 196° 12' - 70° 48' = 125° 24'

Azimuth DC = 196° 12' - 180° = 16° 12'
∠D = 175° 24' - 16° 12' = 159° 12'

Azimuth ED = 175° 24' + 180° = 355° 24'
∠E = 360° - 355° 24' + 112° 18' = 116° 54'

(12)

$$\text{Azimuth FE} = 112^{\circ} 18' + 180^{\circ} = 292^{\circ} 18'$$
$$\angle F = 360^{\circ} - 292^{\circ} 18' + 30^{\circ} = 97^{\circ} 42'$$

$$\text{Azimuth AF} = 180^{\circ} + 30^{\circ} = 210^{\circ}$$
$$\angle A = 290^{\circ} 45' - 210^{\circ} = 80^{\circ} 45'$$

$$\angle A + \angle B + \angle C + \angle D + \angle E + \angle F$$
$$80^{\circ} 45' + 140^{\circ} 03' + 125^{\circ} 24' + 159^{\circ} 12'$$
$$+ 116^{\circ} 54' + 97^{\circ} 42' = 720^{\circ}$$

number of sides in traverse

$$(n-2) * 180 \dots \text{for checking}$$

$$(6-2) * 180 = 720^{\circ} \dots \text{its ok.}$$

H.W / ABCD square fixed from point A
the direction AB = $52^{\circ} 45'$. Calculate
the directions for other sides.