Great Circle Calculations/Sight Reduction

DATA INPUTS: Meridian Angle < 90°

Meridian Angle (t) = ____° E/W

My Latitude (L) = ____° N/S

Latitude Dest. (d) = ____° N/S

1. tan(d) ÷ cos(t) = tan(W)

W = ____°

2. Use [+ W] if d has the same name as L.
Use [- W] if d has opposite name as L.

(90° - L) ± W = X

X = ____°

3. Ignore the sign of X (i.e. -60 = 60)
If X < 90°, then X = Y
If X > 90°, then 180 - X = Y

Y = ____°

4. [cos(W) ÷ cos(Y)] * tan(t) = tan(Az)

Az = ____°

5. cos(Az) * tan(Y) = tan(Hc)

Hc = ____°

Zn = ____°

6. (90°- Hc) * 60 = Distance

90.00°

- ____°

____°

Convert angular distance to nm.

____°

× 60

D = ____nm

Differences Where Meridian Angle > 90°

180°-Meridian Angle = (t) = ____° E/W

2. (90° - L) - W = X

X = ____°

Azimuth Rules for Step 5

Meridian Angle (t)	1° to 179° W	1° to 179° E
L is in North Latitude		
If d or W > L	Zn= 360 - Az	Zn= Az
If d contrary or W < L	Zn= 180 + Az	Zn= 180 - Az
L is in South Latitude		
If d or W > L	Zn= 180 + Az	Zn= 180 - Az
If d contrary or W < L	Zn= 360 - Az	Zn= Az

6. Distance = (90°+ Hc) * 60

90.00°

+ ____°

____°

Convert angular distance to nm.

____°

× 60

D = ____nm