Double Meridian Distance (D.M.D)

To find the area of closed traverse by using the information of Departure and Latitude of sides, this way is called (D.M.D).

Example/ The values of latitude and departure of each side in closed traverse are illustrated in table below. Compute the area of the traverse.

side	Lat.	Dep.	D.M.D	Double area = lat. * D.M.D → Lat. * D.M.D +	Lat. * D.M.D −
AB	220.5	120.0	120	26460	
BC	-240.2	200.5	440.5		105808.1
CD	-160.0	-100.5	540.5		8640.0
DA	179.7	-220.0	220.0	39534	
				Σ = 65994	Σ = 192288.1

D.M.D $_{AB}$ = 120

D.M.D $_{BC}$ = D.M.D $_{AB}$ + Dep. AB + Dep. BC = 440.5

D.M.D $_{CD}$ = D.M.D $_{BC}$ + Dep. BC + Dep. CD = 540.5

D.M.D $_{DA}$ = D.M.D $_{CD}$ + Dep. CD + Dep. DA = 220.0

Double area = $|65994 - 192288.1| = 126294.1$

∴ Area of closed traverse = $\frac{126294.1}{2} = 63147.05\ m^2$

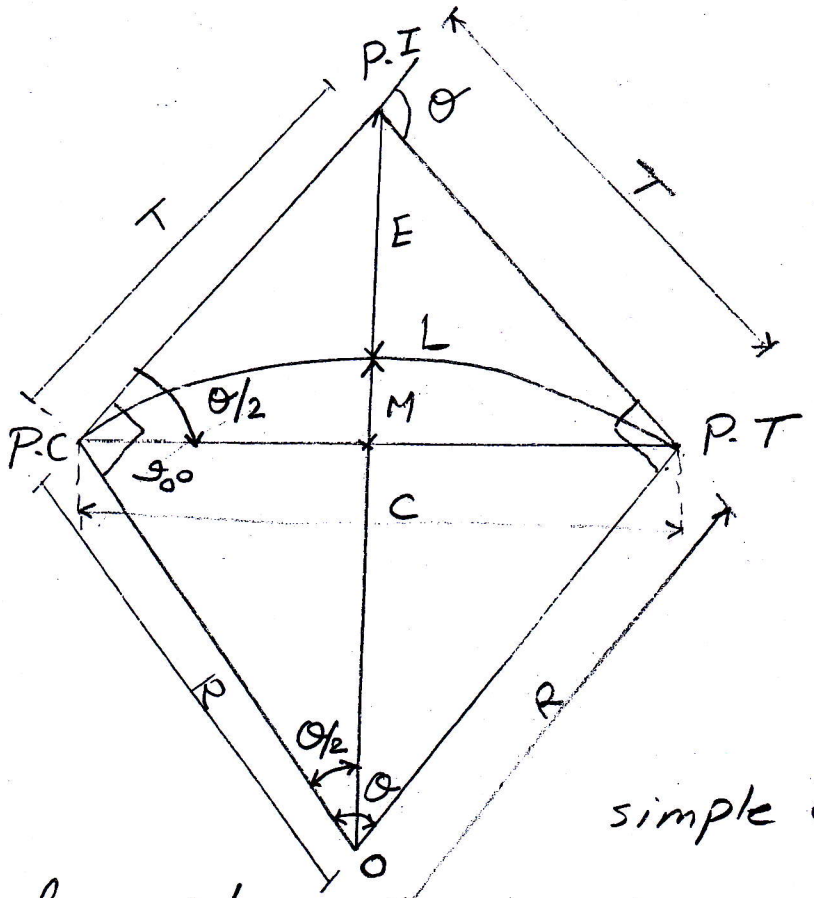
Setting-out works

In many kinds of construction, such as roads and railway two straights will normally be connected by a curve wherever there is a change in direction.

There are two kinds of curve

1. Horizontal curve.
2. Vertical curve.

Horizontal curve :- is a simple circular curve as shown in figure below, two straights meet at the point of intersection P.I, and a circular arc of radius R runs between the straights, meeting tangentially at the tangent point P.C & P.T. The angle of total deflection angle θ of the the straight lines is also shown. This angle is sometimes refferred to as the angle of deviation or as the angle of intersection.



simple circular curve

P.C = point of curvature.
P.I = point of intersection.
P.T = point of tangency.
L = length of the curve.
θ = deflection angle or central angle.
C = chord length.
R = radius of curve.
M = middle ordinate.
E = external distance.
T = tangent distance.
O = center of the curve.