Calculating Sinuosity

These calculations refer to 1 field method - **Slope & Bearing**

GIVEN:

UpstreamTransect (i.e. A1,A2,A3,A4….K0)

SegmentLength (distance between sighter and sightee; (DT on spreadsheet)

Bearing (degrees)

1. For each UpStreamTransect, associate a SegmentLength and Bearing.
2. Convert units on Bearing from degrees to radians; call it theta (θ).
3. Calculate Northing vector for each UpstreamTransect. This is [SegmentLength x (Cosθ)]
4. Calculate Easting vector for each Upstream Transect. This is [SegmentLength x (Sinθ)].
5. Calculate CrowFlyDistance This takes 3 steps
   a. Sum all Northing vectors, then square the sum.
   b. Sum all Easting vectors, then square the sum.
   c. Square root of (result from a + result from b)
6. Calculate the MeanderDistance. This is the sum of all SegmentLengths

REPORT:

Sinuosity = MeanderDistance/CrowFlyDistance

Metric	SourceFile	Operation
Sinuosity	SlopeAndBearing	Divide field-measured meander length of the site by the straight distance between top and bottom (determined with trigonometry).