

	O&M		MSC		
Point	LAT	LON	LAT	LON	DIST
0					
5					
10					
15					
20					
25					
30					
				AVG	

$$\text{AVG} = \Sigma \text{DIST} / n$$

Asa Hayes

Measurement	O&M Lat.	O&M Long.
<b>0 MIN</b>	0.534382815980521	-1.6813952234999
<b>5 MIN</b>	0.534382990513447	-1.6813952234999
<b>10 MIN</b>	0.534383514112222	-1.68139539803282
<b>15 MIN</b>	0.534384735842699	-1.68139469990112
<b>20 MIN</b>	0.534382641447596	-1.68139487443405
<b>25 MIN</b>	0.534385084908549	-1.6813952234999
<b>30 MIN</b>	0.534382466914671	-1.68139504896697

Coordinates in degrees O&M Lat.	Transcribed from collected O&M Long.
30.61788	-96.33685
30.61789	-96.33685
30.61792	-96.33686
30.61799	-96.33682
30.61787	-96.33683
30.61801	-96.33685
30.61786	-96.33684

Questions:

a) RMS refers to the distance that each point falls from where it was predicted.

STD DEV refers to the range around the mean where it is most likely for any given pair

b) Degrees of Freedom is basically the amount of available points in your data that are  
Usually corresponds to the amount of points in a sample – 1, but can be brought lower

12 <sup>th</sup> Man Lat.	12 <sup>th</sup> Man Long.	DIST (km)	AVG	= V
0.534280016087579	-1.68145316843107	<b>0.7279304551</b>	<b>0.7328902551</b>	-0.005
0.534280016087579	-1.68145316843107	<b>0.7289310601</b>	<b>0.7328902551</b>	-0.004
0.534279841554654	-1.68145351749692	<b>0.7333520237</b>	<b>0.7328902551</b>	0.0005
0.534279667021729	-1.68145351749692	<b>0.7430272775</b>	<b>0.7328902551</b>	0.0101
0.534280190620504	-1.68145334296399	<b>0.727191233</b>	<b>0.7328902551</b>	-0.0057
0.534280190620504	-1.68145386656277	<b>0.7416102427</b>	<b>0.7328902551</b>	0.0087
0.534279841554654	-1.68145351749692	<b>0.7281894935</b>	<b>0.7328902551</b>	-0.0047
				<b>=ΣV<sup>2</sup></b>

| data

12 <sup>th</sup> Man Lat.	12 <sup>th</sup> Man Long.	
30.61199	-96.34017	
30.61199	-96.34017	
30.61198	-96.34019	
30.61197	-96.34019	<b>S</b>
30.612	-96.34018	
30.612	-96.34021	
30.61198	-96.34019	

it to fall in.

e *free* to not be a set value.

r conditionally.

-96.34017

=V²
2.46E-05
1.5675E-05
2.1323E-07
0.00010276
3.2479E-05
7.6038E-05
2.2097E-05
<b>0.000274</b>

StDev:  
0.00675600341

**TD DEV = +/-**

$$\sigma_{\pm} = \sqrt{\frac{\Sigma V^2}{n-1}}$$

**Questions:**

a. (5 pts) What is the difference between RMS and STD DEV?

b. (5pts) What is Degree of Freedom and how does it make a difference?