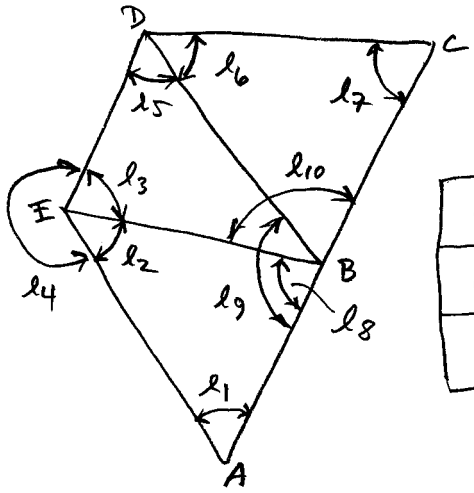


CE 597 (029) Adj. of Geospatial Obs. - Homework 2
 assigned Tuesday 23 Sept, 08 ; due Tuesday 30 Sept.

Do all problems using matrix techniques

1. Adjust the angle figure using observations only. Line ABC is a straight line.



obs#	1	2	3	4	5	6	7	8	9	10
value	61°	58°	62°	241°	59°	48°	71°	60°	121°	118°
σ	1°	1°	1°	1°	1°	2°	2°	2°	2°	2°

2. Fit a paraboloid of revolution to the following data, using the model $Z = a_0 + a_1x + a_2y + a_3(x^2 + y^2)$. Z is observed, x & y constant.

obs	x	y	z	σ
1	5	5	4.28	.02
2	-5	6	5.61	.01
3	-4	-3	5.47	.02
4	4	-2	4.23	.01
5	-2	2	3.42	.01
6	1	0	3.23	.01

3. Find the LS estimate of the coordinates of the unknown point. GCP's 1-5 are errorless.

obs	2D range	σ
1	353.45	.03
2	285.25	.03
3	270.55	.01
4	343.18	.08
5	298.28	.08

