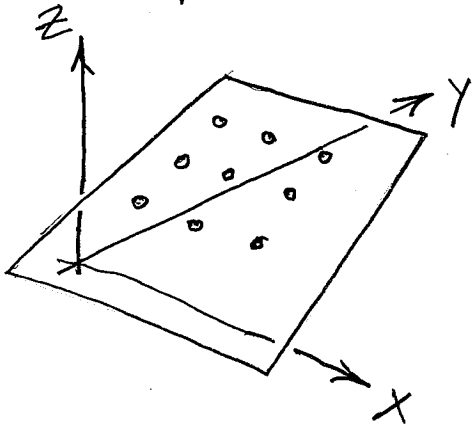Adjustment of Geospatial Observations – Homework 2
assigned Monday 12 Sept, due Monday 19 Sept.

DO ALL ADJUSTMENTS BY MATRIX METHODS

1. Fit points to plane by indirect observations :
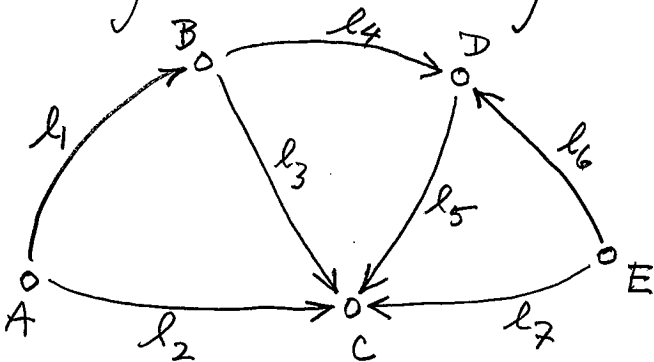

use model $Z = a_0 + a_1 x + a_2 y$

x, y constant

Z observation

$\sigma_Z (1 \rightarrow 6)$ 0.1

$\sigma_Z (7 \rightarrow 9)$ 0.2

X	Y	Z
1	1	2.80
1	2	3.18
1	3	3.02
2	1	3.34
2	2	3.53
2	3	3.62
3	1	3.66
3	2	4.07
3	3	4.97

2. Adjust the _level network_ by indirect observations _and_
   by observations only.

ℓ_1	10.28
ℓ_2	21.87
ℓ_3	12.30
ℓ_4	5.07
ℓ_5	6.98
ℓ_6	2.21
ℓ_7	8.94

$\sigma_\ell (1 \rightarrow 4)$ 0.1

$\sigma_\ell (5 \rightarrow 7)$ 0.3

point A has elevation 0.0

3. If you were going to do #1 by observations only, what
   would the condition equation(s) look like ?