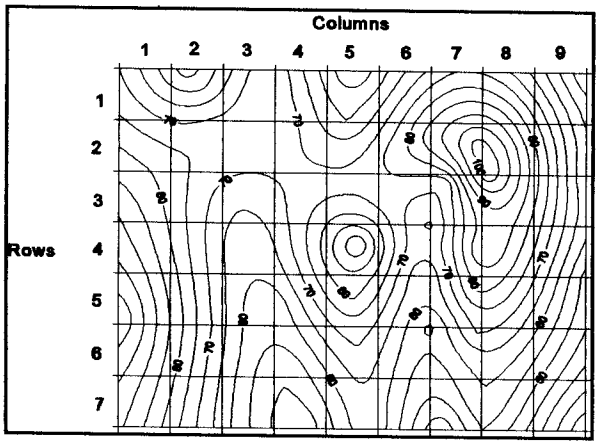
In-Class Exercise:

(1) The vector-line topographic map below is overlain with a raster grid of columns and rows. Determine the elevation of the center point of each cell in integer form, then fill in the grid-table below and create a raster-based, grid DEM data set.



72	77	70	72	82	70	82	76	60
63	68	70	70	73	80	95	94	67
83	73	73	73	75	71	78	92	68
87	73	63	73	90	70	77	85	64
92	75	60	65	80	65	70	75	55
92	74	82	98	67	54	60	63	48
86	71	55	50	62	55	52	55	38

(2) Assume that the scale of this map is 1:10,000, based on the grid structure, what is the resolution of the DEM in meters? (hint: you will need a ruler for this).

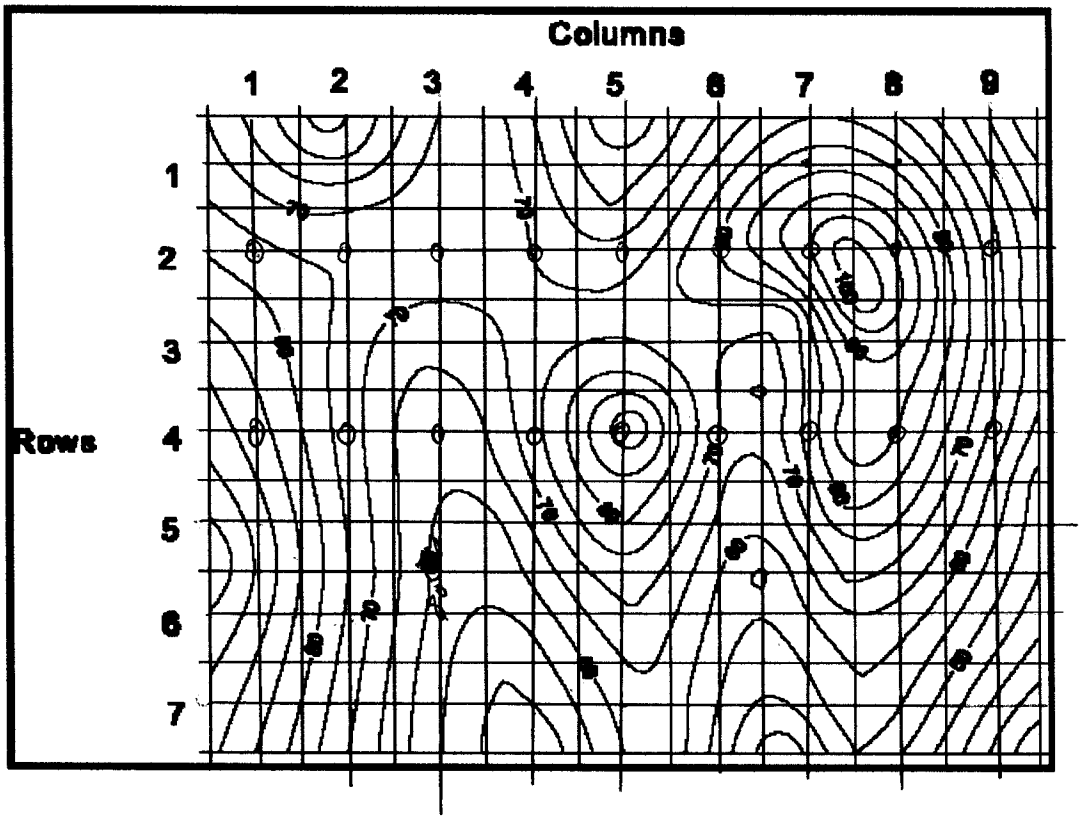
.69 cm × 10,000 = 6900 cm ÷ 100 = 69 M

(3) Based on the map and grid layout, are the rows and columns of equal dimension?

yes .69m × .69cm

(4) Assume that the UTM coordinate of the upper left grid cell is 464091.499289, 4968737.872110 and that the grid system is unrotated. Write out the associated world file for this hypothetical raster-grid data structure (i.e. in the space below, what will the world file look like?)

Grid size in x direction = 69 m
rotation rows = 0.00
rotation Columns = 0.00
Grid size in y direction = -69 m
Easting = 464091.499289
Northing = 4968737.872110


Columns
1
2
3
4
5
6
7
8
9
Rows
1
2
3
4
5
6
7