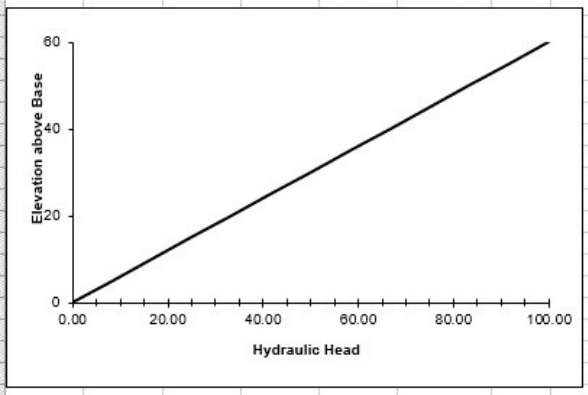
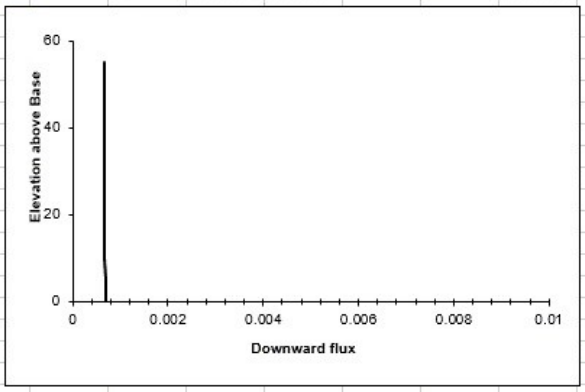
Name: **Luis De la Fuente**

Direct solution for flux		
	K	num cells
zone 1	0.0004	12
zone 2	0.01	0
zone 3	0.0001	0
Keq	0.0004	
q	0.000667	

z	K zone cell	K cell	H	q	zone 1	zone 2	zone 3
60	1	0.0004	100.00		1	0	0
55	1	0.0004	91.67	0.000667	1	0	0
50	1	0.0004	83.34	0.000667	1	0	0
45	1	0.0004	75.00	0.000667	1	0	0
40	1	0.0004	66.67	0.000667	1	0	0
35	1	0.0004	58.34	0.000667	1	0	0
30	1	0.0004	50.00	0.000667	1	0	0
25	1	0.0004	41.67	0.000667	1	0	0
20	1	0.0004	33.34	0.000667	1	0	0
15	1	0.0004	25.00	0.000667	1	0	0
10	1	0.0004	16.67	0.000667	1	0	0
5	1	0.0004	8.33	0.000667	1	0	0
0	1	0.0004	0.00	0.000667	1	0	0

Map of node and cell numbers			
	node	cell	
1	-		1
2	-		2
3	-		3
4	-		4
5	-		5
6	-		6
7	-		7
8	-		8
9	-		9
10	-		10
11	-		11
12	-		12
13	-		13





The Challenge:

Create a 1D, vertical steady state model with constant head top and bottom boundaries.

Show, based on the flux with depth, that the model is steady state.
Repeat this for a homogeneous and for a heterogeneous column.

Show that the steady state flux agrees with the direct calculation based on the harmonic mean average K.

Show the steady state head profile for a column with approximately equal-thickness layers with different K values.
Use this profile to explain why the equivalent hydraulic conductivity, Keq, is closer to the lower of the K values.

Name: **Luis De la Fuente**

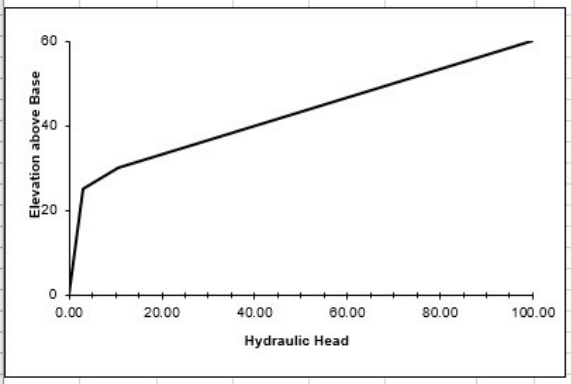
Direct solution for flux

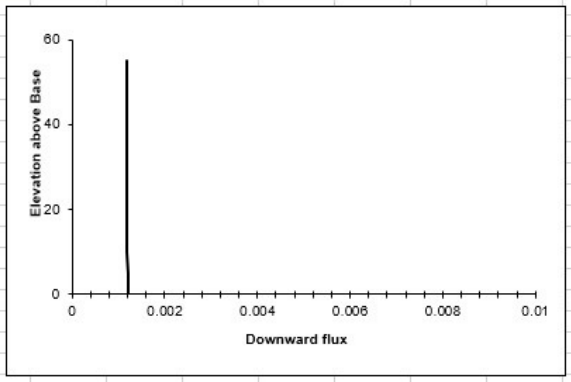
	K	num cells
zone 1	0.0004	6.5
zone 2	0.01	5.5
zone 3	0.0001	0
Keq	0.000714	
q	0.00119	

z	K zone cell	K cell	H	q	zone 1	zone 2	zone 3
60	1	0.0004	100.00		1	0	0
55	1	0.0004	85.12	0.00119	1	0	0
50	1	0.0004	70.24	0.00119	1	0	0
45	1	0.0004	55.36	0.00119	1	0	0
40	1	0.0004	40.48	0.00119	1	0	0
35	1	0.0004	25.60	0.00119	1	0	0
30	1	0.0004	10.71	0.00119	1	0	0
25	2	0.01	2.98	0.00119	0	1	0
20	2	0.01	2.38	0.00119	0	1	0
15	2	0.01	1.79	0.00119	0	1	0
10	2	0.01	1.19	0.00119	0	1	0
5	2	0.01	0.60	0.00119	0	1	0
0	2	0.01	0.00	0.00119	0	1	0

Map of node and cell numbers

	node	cell	
1	-		1
2	-		2
3	-		3
4	-		4
5	-		5
6	-		6
7	-		7
8	-		8
9	-		9
10	-		10
11	-		11
12	-		12
13	-		13





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