

Answer on Question #84330 – Math – Other

Question

A sales manager wishes to assign four sales territories to four salespersons. The salespersons differ in their ability and skills and consequently the sales expected in each territory are different. The estimates of sales per month for each salesperson in different territories are given below:

		<i>Estimated monthly sales territory</i>			
		1	2	3	4
Salesperson	A	20	40	45	30
	B	50	40	55	40
	C	45	40	42	50
	D	48	50	42	45

Find the optimal assignment of the four salespersons to the four different territories and the maximum monthly sales.

Solution

The problem can be solved by complete enumeration method:

No.	Assignment	Sales	No.	Assignment	Sales
1	1A,2B,3C,4D	147	13	3A,1B,2C,4D	180
2	1A,2B,4C,3D	152	14	3A,1B,4C,2D	195
3	1A,3B,2C,4D	160	15	3A,2B,1C,4D	175
4	1A,3B,4C,2D	175	16	3A,2B,4C,1D	183
5	1A,4B,2C,3D	142	17	3A,4B,1C,2D	180
6	1A,4B,3C,2D	152	18	3A,4B,2C,1D	173
7	2A,1B,3C,4D	177	19	4A,1B,2C,3D	162
8	2A,1B,4C,3D	182	20	4A,1B,3C,2D	172
9	2A,3B,1C,4D	185	21	4A,2B,1C,3D	157
10	2A,3B,4C,1D	193	22	4A,2B,3C,1D	160
11	2A,4B,1C,3D	167	23	4A,3B,1C,2D	180
12	2A,4B,3C,1D	170	24	4A,3B,2C,1D	173

Answer: The optimal assignment is 3A,1B,4C,2D; the maximum monthly sales are 195.

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