

IV

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J
1	Why Build Extra Capacity You Don't Need?			If so, where should you put it?						
2	Values of Decision Variables									
3		Bennington	Tractown	used	Capacity	ExtraUnused				
4	Hooperman	0	60	60	60	0				
5	Wizcity	0	60	60	60	0				
6	DoogieCorners	120	130	250	250	0				
7										
8	provided	120	250							
9	Needed	120	250							
10										
11	Cost/profit Coefficients									
12		Bennington	Tractown							
13	Hooperman	27	10							
14	Wizcity	19	8							
15	DoogieCorners	17	7							
16										
17	Costs/profits									
18		Bennington	Tractown							
19	Hooperman	0	600							
20	Wizcity	0	480							
21	DoogieCorners	2040	910							
22										
23				Total	4030					
24										

The Solver Parameters dialog box is open, showing the following settings:

- Set Target Cell: $\$E\23
- Equal To: Max Min Value of: 0
- By Changing Variable Cells: $\$B\$4:\$C\6
- Subject to the Constraints:
 - $\$B\$8 \geq \$B\9
 - $\$C\$8 \geq \$C\9
 - $\$D\$4 \leq \$E\4
 - $\$D\$5 \leq \$E\5
 - $\$D\$6 \leq \$E\6

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What is the Solution? Who provides what to whom and what is the total cost?

Microsoft Excel 8.0e Sensitivity Report
 Worksheet: [EXPANL.pb.xls]Sheet1
 Report Created: 10/18/2000 11:23:40 PM

Adjustable Cells

Cell	Name	Final Value	Reduced Cost	Objective Coefficient	Allowable Increase	Allowable Decrease
$\$B\4	Hooperman Bennington	0	7	27	1E+30	7
$\$C\4	Hooperman Tractown	60	0	10	1	2
$\$B\5	Wizcity Bennington	0	1	19	1E+30	7
$\$C\5	Wizcity Tractown	60	0	8	1	1E+30
$\$B\6	DoogieCorners Bennington	120	0	17	1	20
$\$C\6	DoogieCorners Tractown	130	0	7	3	1

Constraints

Cell	Name	Final Value	Shadow Price	Constraint R.H. Side	Allowable Increase	Allowable Decrease
$\$B\8	provided Bennington	120	20	120	0	60
$\$C\8	provided Tractown	250	10	250	0	60
$\$D\6	DoogieCorners used	250	-3	250	60	0
$\$D\5	Wizcity used	60	-2	60	60	0
$\$D\4	Hooperman used	60	0	60	1E+30	0

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There is adequate capacity. Should you expand a plant? If so, which one would be best to expand? How much would it save, per unit of extra capacity? How much expansion could you have at that savings?

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How much would the cost of Hooperman-Bennington have to decrease before the optimum would shift to another corner?

this box for grade

total=40