

ข้อ 1 หาค่าที่เหมาะสมที่สุด

กำหนด

Period	Demand	Charge	Price/Unit
1	10,15,20	100,80,60	1
2	20,22,25,27	50,40,30,20	1
3	7,10,14	150,125,100	1
4	25,35	200,175	1

Holding Cost = 0.5 unit/period

Set up Cost = 100

ห1 Objective

$$\text{Min}Z = Q_1 + Q_2 + Q_3 + Q_4 + 0.5(I_1 + I_2 + I_3 + I_4)$$

$$+ 100(Y_1 + Y_2 + Y_3 + Y_4) + \dots\dots Z_1 + \dots\dots Z_2 + \dots\dots Z_3 + \dots\dots Z_4$$

..... คือ Charge ที่ขึ้นอยู่กับ Demand ที่เลือก

Subject to

$$Q_1 - I_1 = \dots\dots \text{Demand}_1$$

$$I_1 + Q_2 - I_2 = \dots\dots \text{Demand}_2$$

$$I_2 + Q_3 - I_3 = \dots\dots \text{Demand}_3$$

$$I_3 + Q_4 - I_4 = \dots\dots \text{Demand}_4$$

$$100Y_i - Q_i \geq 0 \quad i=1,2,3,4$$

$$Q_i, I_i \geq 0$$

$$Y_i = \{0,1\}$$

เอกสารทั้งหมด โปรแกรมการรัน สามารถ Download ที่ <http://beam.to/statistics>

	Q				I				Y				Z				LHS	RHS
Objective	1	1	1	1	0.5	0.5	0.5	0.5	100	100	100	100	60	20	100	175		
Constraint 1	1				-1												20	20
Constraint 2		1			1	-1											27	27
Constraint 3			1			1	-1										14	14
Constraint 4				1			1	-1									35	35
Constraint 5	-1								100								4	0
Constraint 6		-1								100							0	0
Constraint 7			-1								100						0	0
Constraint 8				-1								100					0	0
Value	96	0	0	0	76	49	35	0	1	0	0	0	1	1	1	1		
																	Min Z	631

ต้นทุนที่ต่ำที่สุด ได้เท่ากับ

Min Z	631
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โปรแกรมใช้เวลาคำนวณ 1 นาที

Solve

Optimal Solution

Model	Min Z	Demand Period				Q(การสั่งซื้อ)				I(จำนวนใน Inventory)				Y(Period ที่สั่งสินค้า)			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	631.0	20	27	14	35	96	0	0	0	76	49	35	0	1	0	0	0
2	631.0	20	27	14	25	86	0	0	0	66	39	25	0	1	0	0	0

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Model	Min Z	Demand Period				Q(การสั่งซื้อ)				I(จำนวนใน Inventory)				Y(Period ที่สั่งสินค้า)			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	631.0	20	27	14	35	96	0	0	0	76	49	35	0	1	0	0	0
2	631.0	20	27	14	25	86	0	0	0	66	39	25	0	1	0	0	0
3	638.0	20	25	14	35	94	0	0	0	74	49	35	0	1	0	0	0
4	638.0	20	25	14	25	84	0	0	0	64	39	25	0	1	0	0	0
5	643.5	20	22	14	35	91	0	0	0	71	49	35	0	1	0	0	0
6	643.5	20	22	14	25	81	0	0	0	61	39	25	0	1	0	0	0
7	646.0	15	27	14	35	91	0	0	0	76	49	35	0	1	0	0	0
8	646.0	15	27	14	25	81	0	0	0	66	39	25	0	1	0	0	0
9	648.0	20	27	10	35	92	0	0	0	72	45	35	0	1	0	0	0
10	648.0	20	27	10	25	82	0	0	0	62	35	25	0	1	0	0	0
11	650.5	20	20	14	35	89	0	0	0	69	49	35	0	1	0	0	0
12	650.5	20	20	14	25	79	0	0	0	59	39	25	0	1	0	0	0
13	653.0	15	25	14	35	89	0	0	0	74	49	35	0	1	0	0	0
14	653.0	15	25	14	25	79	0	0	0	64	39	25	0	1	0	0	0
15	655.0	20	25	10	35	90	0	0	0	70	45	35	0	1	0	0	0
16	655.0	20	25	10	25	80	0	0	0	60	35	25	0	1	0	0	0
17	658.5	15	22	14	25	76	0	0	0	61	39	25	0	1	0	0	0
18	658.5	15	22	14	35	86	0	0	0	71	49	35	0	1	0	0	0
19	660.5	20	22	10	35	87	0	0	0	67	45	35	0	1	0	0	0
20	660.5	20	22	10	25	77	0	0	0	57	35	25	0	1	0	0	0
21	661.0	10	27	14	35	86	0	0	0	76	49	35	0	1	0	0	0
22	661.0	10	27	14	25	76	0	0	0	66	39	25	0	1	0	0	0
23	663.0	15	27	10	35	87	0	0	0	72	45	35	0	1	0	0	0
24	663.0	15	27	10	25	77	0	0	0	62	35	25	0	1	0	0	0
25	665.5	15	20	14	35	84	0	0	0	69	49	35	0	1	0	0	0
26	665.5	15	20	14	25	74	0	0	0	59	39	25	0	1	0	0	0
27	667.0	20	27	7	35	89	0	0	0	69	42	35	0	1	0	0	0
28	667.0	20	27	7	25	79	0	0	0	59	32	25	0	1	0	0	0
29	667.5	20	20	10	25	75	0	0	0	55	35	25	0	1	0	0	0
30	667.5	20	20	10	35	85	0	0	0	65	45	35	0	1	0	0	0
31	668.0	10	25	14	35	84	0	0	0	74	49	35	0	1	0	0	0
32	668.0	10	25	14	25	74	0	0	0	64	39	25	0	1	0	0	0
33	670.0	15	25	10	25	75	0	0	0	60	35	25	0	1	0	0	0
34	670.0	15	25	10	35	85	0	0	0	70	45	35	0	1	0	0	0
35	673.5	10	22	14	25	71	0	0	0	61	39	25	0	1	0	0	0
36	673.5	10	22	14	35	81	0	0	0	71	49	35	0	1	0	0	0

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37	674.0	20	25	7	35	87	0	0	0	67	42	35	0	1	0	0	0
38	674.0	20	25	7	25	77	0	0	0	57	32	25	0	1	0	0	0
39	675.5	15	22	10	35	82	0	0	0	67	45	35	0	1	0	0	0
40	675.5	15	22	10	25	72	0	0	0	57	35	25	0	1	0	0	0
41	678.0	10	27	10	35	82	0	0	0	72	45	35	0	1	0	0	0
42	678.0	10	27	10	25	72	0	0	0	62	35	25	0	1	0	0	0
43	679.5	20	22	7	35	84	0	0	0	64	42	35	0	1	0	0	0
44	679.5	20	22	7	25	74	0	0	0	54	32	25	0	1	0	0	0
45	680.5	10	20	14	35	79	0	0	0	69	49	35	0	1	0	0	0
46	680.5	10	20	14	25	69	0	0	0	59	39	25	0	1	0	0	0
47	682.0	15	27	7	35	84	0	0	0	69	42	35	0	1	0	0	0
48	682.0	15	27	7	25	74	0	0	0	59	32	25	0	1	0	0	0
49	682.5	15	20	10	35	80	0	0	0	65	45	35	0	1	0	0	0
50	682.5	15	20	10	25	70	0	0	0	55	35	25	0	1	0	0	0
51	685.0	10	25	10	35	80	0	0	0	70	45	35	0	1	0	0	0
52	685.0	10	25	10	25	70	0	0	0	60	35	25	0	1	0	0	0
53	686.5	20	20	7	35	82	0	0	0	62	42	35	0	1	0	0	0
54	686.5	20	20	7	25	72	0	0	0	52	32	25	0	1	0	0	0
55	689.0	15	25	7	25	72	0	0	0	57	32	25	0	1	0	0	0
56	689.0	15	25	7	35	82	0	0	0	67	42	35	0	1	0	0	0
57	690.5	10	22	10	25	67	0	0	0	57	35	25	0	1	0	0	0
58	690.5	10	22	10	35	77	0	0	0	67	45	35	0	1	0	0	0
59	694.5	15	22	7	35	79	0	0	0	64	42	35	0	1	0	0	0
60	694.5	15	22	7	25	69	0	0	0	54	32	25	0	1	0	0	0
61	697.0	10	27	7	35	79	0	0	0	69	42	35	0	1	0	0	0
62	697.0	10	27	7	25	69	0	0	0	59	32	25	0	1	0	0	0
63	697.5	10	20	10	35	75	0	0	0	65	45	35	0	1	0	0	0
64	697.5	10	20	10	25	65	0	0	0	55	35	25	0	1	0	0	0
65	701.5	15	20	7	25	67	0	0	0	52	32	25	0	1	0	0	0
66	701.5	15	20	7	35	77	0	0	0	62	42	35	0	1	0	0	0
67	704.0	10	25	7	25	67	0	0	0	57	32	25	0	1	0	0	0
68	704.0	10	25	7	35	77	0	0	0	67	42	35	0	1	0	0	0
69	709.5	10	22	7	35	74	0	0	0	64	42	35	0	1	0	0	0
70	709.5	10	22	7	25	64	0	0	0	54	32	25	0	1	0	0	0
71	716.5	10	20	7	35	72	0	0	0	62	42	35	0	1	0	0	0
72	716.5	10	20	7	25	62	0	0	0	52	32	25	0	1	0	0	0

VBA Code

```

Sub Selected_Demand()
    z = 2
    For i = 1 To 3
        Cells(3, 21).Value = i
        For j = 1 To 4
            Cells(4, 21).Value = j
            For k = 1 To 3
                Cells(5, 21).Value = k
                For l = 1 To 2
                    Cells(6, 21).Value = l
                    Call forsolve
                    z = z + 1
                    Cells(z, 34).Value = Cells(12, 19).Value
                    Range(Cells(3, 22), Cells(6, 22)).Select
                    Selection.Copy
                    Cells(z, 35).Select
                    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
                    :=False, Transpose:=True
                    Range(Cells(11, 2), Cells(11, 13)).Select
                    Selection.Copy
                    Cells(z, 39).Select
                    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
                    :=False, Transpose:=False
                Next l
            Next k
        Next j
    Next i
End Sub

Sub forsolve()
    SolverReset
    SolverOk SetCell:="$S$12", MaxMinVal:=2, ValueOf:="0", ByChange:="$B$11:$M$11"
    SolverAdd CellRef:="$R$3:$R$6", Relation:=2, FormulaText:="$S$3:$S$6"
    SolverAdd CellRef:="$R$7:$R$10", Relation:=3, FormulaText:="$S$7:$S$10"
    SolverAdd CellRef:="$J$11:$M$11", Relation:=5, FormulaText:="binary"
    SolverOptions MaxTime:=100, Iterations:=100, Precision:=0.000001, AssumeLinear:= _
    True, StepThru:=False, Estimates:=1, Derivatives:=1, SearchOption:=1, _
    IntTolerance:=5, Scaling:=False, Convergence:=0.0001, AssumeNonNeg:=True
    SolverSolve UserFinish:=True, ShowRef:=True
End Sub

```

ข้อ 2 หาค่าที่เหมาะสมที่สุด

กำหนด

Activities	Demand	Charge	
A	1,2,3	1,0.7,0.5	-
B	4,5	0.8,0.6	-
C	6,7,8,9	0.7,0.6,0.5,0.4	A
D	3,4,5	1,0.8,0.6	A
E	5,6	1,0.9	A,B
F	7,8	0.7,0.5	C,D
G	8,9,10	0.8,0.7,0.6	E,F
H	2,3,4,5	1,0.9,0.8,0.7	G

Budget ≤ 6.5

หาค่า Objective

$$\text{Min}Z = t_a X_a + t_b X_b + t_c X_c + t_d X_d + t_e X_e + t_f X_f + t_g X_g + t_h X_h + 0X_{12} + 0X_{32}$$

Subject to

$$-X_a - X_b = -1$$

$$X_a - X_{12} - X_c = 0$$

$$X_b - X_{32} - X_d = 0$$

$$X_{12} + X_{23} - X_e = 0$$

$$X_c + X_d - X_f = 0$$

$$X_f + X_e - X_g = 0$$

$$X_g - X_H = 0$$

$$X_H = 1$$

$$X_i \geq 0 \quad \forall_i$$

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เส้นทางการทำงาน	01(A)	03(B)	12	14(C)	25(E)	32	34(D)	45(F)	56(G)	67(H)	LHS	RHS
Objective	1	5	0	9	5	0	5	8	8	2		
Constraint (Node)0	-1	-1									-1	-1
Constraint (Node)1	1		-1	-1							0	0
Constraint (Node)2			1		-1	1					0	0
Constraint (Node)3		1				-1	-1				0	0
Constraint (Node)4				1			1	-1			0	0
Constraint (Node)5					1			1	-1		0	0
Constraint (Node)6									1	-1	0	0
Constraint (Node)7										1	1	1
Value	1	0	1	0	1	0	0	0	1	1		
											Min Z	16

ต้นทุนที่ต่ำที่สุด ได้เท่ากับ

Min Z	16
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โปรแกรมใช้เวลาคำนวณ 40 นาที

Solve

Optimal Solution

Model	Min Z	Duration									การเลือกเส้นทาง									Budget
		01(A)	03(B)	14(C)	25(E)	34(D)	45(F)	56(G)	67(H)	01(A)	03(B)	12	14(C)	25(E)	32	34(D)	45(F)	56(G)	67(H)	
1	16	1	5	9	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	5.9

เอกสารทงหมด โปรแกรมการรัน สามารถ Download ที่ <http://beam.to/statistics>

Model	Min Z	Duration								การเลือกเส้นทาง										Budget
		01(A)	03(B)	14(C)	25(E)	34(D)	45(F)	56(G)	67(H)	01(A)	03(B)	12	14(C)	25(E)	32	34(D)	45(F)	56(G)	67(H)	
1	16	1	5	9	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	5.9
2	16	1	5	8	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6
3	16	1	4	9	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.1
4	16	1	5	7	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.1
5	16	1	5	9	4	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.1
6	16	1	5	9	5	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.1
7	16	1	4	8	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.2
8	16	1	5	6	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.2
9	16	1	5	8	4	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.2
10	16	1	5	8	5	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.2
11	16	1	4	7	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.3
12	16	1	4	9	4	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.3
13	16	1	4	9	5	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.3
14	16	1	5	7	4	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.3
15	16	1	5	7	5	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.3
16	16	1	5	9	3	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.3
17	16	1	5	9	4	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.3
18	16	1	4	6	5	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.4
19	16	1	4	8	4	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.4
20	16	1	4	8	5	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.4
21	16	1	5	6	4	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.4
22	16	1	5	6	5	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.4
23	16	1	5	8	3	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.4
24	16	1	5	8	4	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.4
25	16	1	4	7	4	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.5
26	16	1	4	7	5	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.5
27	16	1	4	9	3	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.5
28	16	1	4	9	4	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.5
29	16	1	5	7	3	5	8	8	2	1	0	1	0	1	0	0	0	1	1	6.5
30	16	1	5	7	4	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.5
31	16	1	5	9	3	5	7	8	2	1	0	1	0	1	0	0	0	1	1	6.5
32	17	1	4	6	4	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.5
33	17	1	4	6	4	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.5
34	17	1	4	6	4	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.5
35	17	1	4	6	5	5	7	8	3	1	0	1	0	1	0	0	0	1	1	6.5
36	17	1	4	6	5	5	7	9	2	1	0	1	0	1	0	0	0	1	1	6.5
37	17	1	4	6	5	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.3
38	17	1	4	6	5	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.3
39	17	1	4	6	5	6	7	8	2	1	0	1	0	1	0	0	0	1	1	6.5
40	17	1	4	6	5	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.3

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41	17	1	4	7	4	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.4
42	17	1	4	7	4	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.4
43	17	1	4	7	4	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.4
44	17	1	4	7	5	5	7	8	3	1	0	1	0	1	0	0	0	1	1	6.4
45	17	1	4	7	5	5	7	9	2	1	0	1	0	1	0	0	0	1	1	6.4
46	17	1	4	7	5	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.2
47	17	1	4	7	5	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.2
48	17	1	4	7	5	6	7	8	2	1	0	1	0	1	0	0	0	1	1	6.4
49	17	1	4	7	5	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.2
50	17	1	4	8	3	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.5
51	17	1	4	8	3	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.5
52	17	1	4	8	3	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.5
53	17	1	4	8	4	5	7	8	3	1	0	1	0	1	0	0	0	1	1	6.5
54	17	1	4	8	4	5	7	9	2	1	0	1	0	1	0	0	0	1	1	6.5
55	17	1	4	8	4	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.3
56	17	1	4	8	4	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.3
57	17	1	4	8	4	6	7	8	2	1	0	1	0	1	0	0	0	1	1	6.5
58	17	1	4	8	4	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.3
59	17	1	4	8	5	5	7	8	3	1	0	1	0	1	0	0	0	1	1	6.3
60	17	1	4	8	5	5	7	9	2	1	0	1	0	1	0	0	0	1	1	6.3
61	17	1	4	8	5	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.1
62	17	1	4	8	5	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.1
63	17	1	4	8	5	6	7	8	2	1	0	1	0	1	0	0	0	1	1	6.3
64	17	1	4	8	5	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.1
65	17	1	4	9	3	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.4
66	17	1	4	9	3	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.4
67	17	1	4	9	3	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.4
68	17	1	4	9	4	5	7	8	3	1	0	1	0	1	0	0	0	1	1	6.4
69	17	1	4	9	4	5	7	9	2	1	0	1	0	1	0	0	0	1	1	6.4
70	17	1	4	9	4	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.2
71	17	1	4	9	4	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.2
72	17	1	4	9	4	6	7	8	2	1	0	1	0	1	0	0	0	1	1	6.4
73	17	1	4	9	4	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.2
74	17	1	4	9	5	5	7	8	3	1	0	1	0	1	0	0	0	1	1	6.2
75	17	1	4	9	5	5	7	9	2	1	0	1	0	1	0	0	0	1	1	6.2
76	17	1	4	9	5	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6
77	17	1	4	9	5	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6
78	17	1	4	9	5	6	7	8	2	1	0	1	0	1	0	0	0	1	1	6.2
79	17	1	4	9	5	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6
80	17	1	5	6	3	5	8	8	3	1	0	1	0	1	0	0	0	1	1	6.5
81	17	1	5	6	3	5	8	9	2	1	0	1	0	1	0	0	0	1	1	6.5
82	17	1	5	6	3	6	8	8	2	1	0	1	0	1	0	0	0	1	1	6.5

VBA Code

```

Sub Selected_duration()
    z = 2
    For i = 1 To 3
        Cells(3, 21).Value = i
        For j = 1 To 2
            Cells(4, 21).Value = j
            For k = 1 To 4
                Cells(5, 21).Value = k
                For l = 1 To 3
                    Cells(6, 21).Value = l
                    For m = 1 To 2
                        Cells(7, 21).Value = m
                        For n = 1 To 2
                            Cells(8, 21).Value = n
                            For o = 1 To 3
                                Cells(9, 21).Value = o
                                For p = 1 To 4
                                    Cells(10, 21).Value = p
                                    z = z + 1
                                    If Cells(11, 23).Value <= 6.5 Then
                                        Call forsolve2
                                        Cells(z, 34).Value = Cells(12, 13).Value
                                        Range(Cells(3, 22), Cells(10, 22)).Select
                                        Selection.Copy
                                        Cells(z, 35).Select
                                        Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
                                        :=False, Transpose:=True
                                        Range(Cells(11, 2), Cells(11, 13)).Select
                                        Selection.Copy
                                        Cells(z, 43).Select
                                        Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
                                        :=False, Transpose:=False
                                    Else
                                        Cells(z, 34).Value = "Budget > 6.5"
                                        Range(Cells(3, 22), Cells(10, 22)).Select
                                        Selection.Copy
                                        Cells(z, 35).Select
                                        Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
                                        :=False, Transpose:=True
                                    End If
                                    Cells(z, 53).Value = Cells(11, 23).Value
                                Next p
                            Next o
                        Next n
                    Next m
                Next l
            Next k
        Next j
    Next i
End Sub

Sub forsolve2()
    SolverReset
    SolverOk SetCell:="$M$12", MaxMinVal:=2, ValueOf:="0", ByChange:="$B$11:$K$11"
    SolverAdd CellRef:="$L$3:$L$10", Relation:=2, FormulaText:="$M$3:$M$10"
    SolverOptions MaxTime:=100, Iterations:=100, Precision:=0.000001, AssumeLinear:= _
    True, StepThru:=False, Estimates:=1, Derivatives:=1, SearchOption:=1, _
    IntTolerance:=5, Scaling:=False, Convergence:=0.0001, AssumeNonNeg:=True
    SolverSolve UserFinish:=True, ShowRef:=True
End Sub

```