

	A	B	C	D	E	F
1	max problem	Product A (x)	Product B (y)	Product C (z)	available	
2	constraint #1	1	1	1	20	
3	constraint #2	4	3	2	42	
4	constraint #3	0	3	2	30	
5	Profit	6	5	4	MAX	
6						
7	obj funct, p=	78				
8						
9	Decision Variable					
10	Product A (x)	3				
11	Product B (y)	0				
12	Product C (z)	15				
13						
14	Constraints	equation	limit			
15	constraint #1	18	20			
16	constraint #2	42	42			
17	constraint #3	30	30			
18	non-neg 1	3	0			
19	non-neg 2	0	0			
20	non-neg 3	15	0			
21						

	A	B	C	D	E	F
1	max problem	Product A (x)	Product B (y)	Product C (z)	available	
2	constraint #1	1	1	1	20	
3	constraint #2	4	3	2	42	
4	constraint #3	0	3	2	30	
5	Profit	6	5	4	MAX	
6						
7	obj funct, p=	=B5*B10+C5*B11+D5*B12				
8						
9	Decision Variable					
10	=B1		0			
11	=C1		0			
12	=D1		0			
13						
14	Constraints	equation		limit		
15	=A2	=B2*B10+C2*B11+D2*B12		=E2		
16	=A3	=B3*B10+C3*B11+D3*B12		=E3		
17	=A4	=B4*B10+C4*B11+D4*B12		=E4		
18	non-neg 1	=B10		0		
19	non-neg 2	=B11		0		
20	non-neg 3	=B12		0		
21						
22						

## Microsoft Excel 14.0 Answer Report

Worksheet: [solver\_lab.xls]problem

Report Created: 11/18/2010 1:01:02 AM

Result: Solver found a solution. All Constraints and optimality conditions are satisfied.

### Solver Engine

Engine: Simplex LP

Solution Time: 0.125 Seconds.

Iterations: 5 Subproblems: 0

### Solver Options

Max Time 100 sec, Iterations 100, Precision 0.000001

Max Subproblems Unlimited, Max Integer Sols Unlimited, Integer Tolerance 5%, Solve Without Integer Cc

### Objective Cell (Max)

Cell	Name	Original Value	Final Value
\$B\$7	obj funct, p= Product A (x)	0	78

### Variable Cells

Cell	Name	Original Value	Final Value	Integer
\$B\$10	Product A (x)	0	3	Contin
\$B\$11	Product B (y)	0	0	Contin
\$B\$12	Product C (z)	0	15	Contin

### Constraints

Cell	Name	Cell Value	Formula	Status	Slack
\$B\$15	constraint #1 equation	18	$\$B\$15 \leq \$C\$15$	Not Binding	2
\$B\$16	constraint #2 equation	42	$\$B\$16 \leq \$C\$16$	Binding	0
\$B\$17	constraint #3 equation	30	$\$B\$17 \leq \$C\$17$	Binding	0
\$B\$18	non-neg 1 equation	3	$\$B\$18 \geq \$C\$18$	Not Binding	3
\$B\$19	non-neg 2 equation	0	$\$B\$19 \geq \$C\$19$	Binding	0
\$B\$20	non-neg 3 equation	15	$\$B\$20 \geq \$C\$20$	Not Binding	15

constraints, Assume NonNegative

**Microsoft Excel 14.0 Sensitivity Report**

Worksheet: [solver\_lab.xls]problem

Report Created: 11/18/2010 1:01:02 AM

Variable Cells

Cell	Name	Final Value	Reduced Cost	Objective Coefficient	Allowable Increase	Allowable Decrease
\$B\$10	Product A (x)	3	0	6	2	6
\$B\$11	Product B (y)	0	0	5	1	1E+30
\$B\$12	Product C (z)	15	0	4	1E+30	0.666666667

Constraints

Cell	Name	Final Value	Shadow Price	Constraint R.H. Side	Allowable Increase	Allowable Decrease
\$B\$15	constraint #1 equation	18	0	20	1E+30	2
\$B\$16	constraint #2 equation	42	1.5	42	8	12
\$B\$17	constraint #3 equation	30	0.5	30	8	30
\$B\$18	non-neg 1 equation	3	0	0	3	1E+30
\$B\$19	non-neg 2 equation	0	-1	0	10	0
\$B\$20	non-neg 3 equation	15	0	0	15	1E+30