

Программа SIMP_INT.EXE

Исследование операций
с применением компьютера
Версия 2.00a (2007)

BRANCH-AND-BOUND METHOD
Reading problem from a file

SIMP_INT /2

Type of problem : MAXIMIZATION MINIMIZATION

Number of variables (max.20) 3 Number of the constraints (max.20) 4

3.00 11.00 5.00

x(1) x(2) x(3)

1	2.00	4.00	3.00	≤	17.00
2	3.00	2.00	0.00	≤	15.00
3	4.00	0.00	2.00	≤	21.00
4	0.00	3.00	7.00	≤	22.00

Variable	Lower bound	Upper bound	Integer constraint?
x(1)	0	1000	Yes
x(2)	0	1000	Yes
x(3)	0	1000	Yes

Iteration 2

Problem no.	Value of the obj.function (max)	Are all integer constraints satisfied?	No.of subproblems into which the problem was branched	
1	46.750000	No	2	3
2	45.666667	No	-	-
3	Infeasible problem	-	-	-

Arrange problem list

Iteration 2

Problem no.	Value of the obj.function (max)	Are all integer constraints satisfied?	No.of subproblems into which the problem was branched
2	45.666667	No	-

Should the solving process be finished now ? Yes No

Solving the problem

Iteration 2

Problem no.	Value of the obj.function (max)	Are all integer constraints satisfied?	No.of subproblems into which the problem was branched
2	45.666667	No	-

Select the problem for branching

Iteration 2

Variable	Optimal solution	Lower bound	Upper bound	Integer constraint?
x(1)	0.000000	0.00	1000.00	Yes
x(2)	4.000000	0.00	4.00	Yes
x(3)	0.333333	0.00	1000.00	Yes

Select the variable for branching

Iteration 2

Variable	Optimal solution	Lower bound	Upper bound	Integer constraint?
x(3)	0.333333	0.00	1000.00	Yes

Problem 4			Problem 5		
Variable	Lower bound	Upper bound	Variable	Lower bound	Upper bound
x(3)	0	0	x(3)	1	1000

Enter lower and upper bounds

Optimal solution

Problem no.	Value of the obj.function (max)	Are all integer constraints satisfied?	No.of subproblems into which the problem was branched
6	44.000000	Yes	-

BRANCH-AND-BOUND METHOD
Solving the problem

SIMP_INT/10

Problem 1/ 1 (6/ 9)

Variable	Optimal solution	Lower bound	Upper bound	Integer constraint?
x(1)	0.000000	0.00	0.00	Yes
x(2)	4.000000	0.00	4.00	Yes
x(3)	0.000000	0.00	0.00	Yes
Value of the objective function =				44.0000000000