

Программа KWADRAT.EXE

Исследование операций
с применением компьютера
Версия 2.00a (2007)

QUADRATIC PROGRAMMING
Reading problem from a file

KWADRAT /2

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

Row no.	1	2	3	4	Column no.
	Quadratic form matrix				Linear f.vector
1	1344.30	1007.70	557.90	372.90	0.00
2	1007.70	2493.00	-379.90	452.10	0.00
3	557.90	-379.90	1480.10	429.40	0.00
4	372.90	452.10	429.40	307.60	0.00

QUADRATIC PROGRAMMING
Reading problem from a file

KWADRAT /3

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

Row no.	1	2	3	4	Column no.	
	Constraints					
1	14.92	-17.64	39.62	6.93	<	-6.00
2	1.00	1.00	1.00	1.00	<	1.00
3	-1.00	-1.00	-1.00	-1.00	<	-1.00

Defining substitute problem

Number of constraints		Variable type					Number of variables	
7		x	x'	y	y'	v	w	
		4	3	3	4	2	4	
Obj.f.coef.	0.00	0.00	0.00	0.00	0.00	Constant		
Basic var.	x (1)	x (2)	x (3)	x (4)	x' (1)	term		
1. v (1)	-14.92	17.64	-39.62	-6.93	-1.00	6.00		
2. x' (2)	1.00	1.00	1.00	1.00	0.00	1.00		
3. v (2)	1.00	1.00	1.00	1.00	0.00	1.00		
4. w (1)	2688.60	2015.40	1115.80	745.80	0.00	0.00		
5. w (2)	2015.40	4986.00	-759.80	904.20	0.00	0.00		
6. w (3)	1115.80	-759.80	2960.20	858.80	0.00	0.00		
7. w (4)	745.80	904.20	858.80	615.20	0.00	0.00		

Enter substitute problem

Iteration 1

Variable	Optimality coefficient	Variable	Optimality coefficient
x (1)	-6551.6800	y' (1)	1.0000
x (2)	-7164.4400	y' (2)	1.0000
x (3)	-4136.3800	y' (3)	1.0000
x (4)	-3118.0700	y' (4)	1.0000
x' (1)	1.0000	v (1) *	0.0000
x' (2) *	0.0000	v (2) *	0.0000
x' (3)	1.0000	w (1) *	0.0000
y (1)	-43.8300	w (2) *	0.0000
y (2)	-4.0000	w (3) *	0.0000
y (3)	4.0000	w (4) *	0.0000

Is the solution optimal ? Yes

Iteration 1

Variable	Optimality coefficient	Variable	Optimality coefficient
x (1)	-6551.6800	y' (1)	1.0000
x (2)	-7164.4400	y' (2)	1.0000
x (3)	-4136.3800	y' (3)	1.0000
x (4)	-3118.0700	y' (4)	1.0000
x' (1)	1.0000	v (1) *	0.0000
x' (2) *	0.0000	v (2) *	0.0000
x' (3)	1.0000	w (1) *	0.0000
y (1)	-43.8300	w (2) *	0.0000
y (2)	-4.0000	w (3) *	0.0000
y (3)	4.0000	w (4) *	0.0000

Select the variable entering the basis

Iteration 1

Basic variable	Constant term vector	Column of coefficients for x (2)	Vector of ratios
v (1)	6.0000	17.6400	0.3401
x' (2)	1.0000	1.0000	1.0000
v (2)	1.0000	1.0000	1.0000
w (1)	0.0000	2015.4000	0.0000
w (2)	0.0000	4986.0000	0.0000
w (3)	0.0000	-759.8000	-
w (4)	0.0000	904.2000	0.0000

Has your selection been correct ?

Iteration 1

Basic variable	Constant term vector	Column of coefficients for x (2)	Vector of ratios
v (1)	6.0000	17.6400	0.3401
x' (2)	1.0000	1.0000	1.0000
v (2)	1.0000	1.0000	1.0000
w (1)	0.0000	2015.4000	0.0000
w (2)	0.0000	4986.0000	0.0000
w (3)	0.0000	-759.8000	-
w (4)	0.0000	904.2000	0.0000

Select the variable leaving the basis

Substitute problem solution

Variable	Variable value	Variable	Variable value
x (1)	0.0000	y' (1) *	1389.6982
x (2) *	0.5263	y' (2)	0.0000
x (3)	0.0000	y' (3) *	2279.8351
x (4) *	0.4737	y' (4)	0.0000
x' (1)	0.0000	v (1)	0.0000
x' (2) *	0.0000	v (2)	0.0000
x' (3)	0.0000	w (1)	0.0000
y (1) *	92.9982	w (2)	0.0000
y (2)	0.0000	w (3)	0.0000
y (3) *	1411.7645	w (4)	0.0000

Does the solution of the quadratic programming problem exist ?

Optimal solution

Variable	Variable value
x (1)	0.0000
x (2)	0.5263
x (3)	0.0000
x (4)	0.4737
Objective function value:	-984.8770