Maximize z =40x1+50X2
Subject to
x1+2x2 <= 40
4X1 + 3x2 <= 120
X1, x2 >= 0

Step1: Standard form
x1+2x2 +s1 = 40
4X1+3x2 +s2 = 120
X1, x2, s1, s2 >= 0
z -40x1-50X2 =0
Step2: Slack variables are s1, s2

1 Starting simplex tableau

	Basic	z	x1
Objective equation	z	1	-40
	s1	0	1
	s2	0	4

2 Select most positive co-efficient of objective function or most negative of objective equatio

	Basic	entering x2	Solution
leave	s1	2	40
	s2	3	120

3 x1 is entering variable and s1 is leaving variable (because ratio is found minimum for s1)

	Basic	z	x1
	z	1	-40
leave	s1	0	1
	s2	0	4

4 Replace the leaving variable in the basic column with the entering variable
New pivot row = current pivot row/pivot element (common element of pivot row and pivot
all other rows = current row respective value - pivot column respective coefficient*new piv

So, the new basic solution is (x1, s2)
new tableau becomes

	Basic	z	x1
	z	1	-15
	x2	0	0.5
pivot row	s2	0	2.5
			pivot col

5 Test optimality condition again

	Basic	entering x1	Solution
	x2	0.5	20
	s2	2.5	60

6 So, s2 leaves and x1 enters

x2	s1	s2	Solution if x1=0,x2=0 (first corner point)	
-50	0	0	0	ratio of solution and x2
2	1	0	40	20
3	0	1	120	40

n as entering variable (x1) and test the condition of optimality

ratio or intercept	Remarks
20	minimum
40	

enter

x2	s1	s2	Solution	
-50	0	0	0	
2	1	0	40	pivot row
3	0	1	120	

pivot column

column=2)

ot row respective value

x2	s1	s2	Solution	
0	25	0	1000	ratio or intercept
1	0.5	0	20	40
0	-1.5	1	60	24

umn

ratio or intercept	Remarks
40	
24	minimum

	New pivot row = current pivot row/pivot element (common element of pivot row and pivot			
	all other rows = current row respective value - pivot column respective coefficient*new pivo			
		Basic	z	x1
		z	1	0
		x2	0	0
		x1	0	1
7	now, check none of z row coefficients are associated with x1, x2, s1, s2 are negative, hence			
	final answer	x1	24	
		x2	8	
		z	1360	

column=6)

ot row respective value

x2	s1	s2	Solution
0	16	6	1360
1	0.8	-0.2	8
0	-0.6	0.4	24

optimal solution