

ANEXO 5 – Programación y Resultados en el LINDO

Min $32.8x_1 + 68.1x_2 + 40.07x_3 + 44.2x_4 + 78.7x_5 + 74.9x_6 + 54.11x_7 + 35.84x_8 + 28.98x_9 + 38.07x_{10} + 44.23x_{11} + 46.49x_{12} + 41.51x_{13} + 40.82x_{14} + 55.11x_{15} + 32.17x_{16} + 32.67x_{17} + 33.37x_{18} + 32.34x_{19} + 32.74x_{20} + 34.05x_{21} + 25.65x_{22} + 33.39x_{23} + 24.83x_{24} + 46.96x_{25}$

Subject to

$x_1 + x_{10} + x_{11} + x_{12} + x_{13} + x_{14} + x_{15} + x_{16} + x_{17} + x_{18} + x_{19} + x_{20} + x_{21} + x_{22} + x_{25} = 1$
 $x_3 + x_4 + x_5 + x_7 + x_8 + x_{13} + x_{14} = 1$
 $x_6 + x_8 = 1$
 $x_3 + x_4 + x_5 + x_7 + x_{13} + x_{14} = 1$
 $x_1 + x_7 + x_{16} + x_{17} + x_{18} + x_{19} + x_{20} = 1$
 $x_1 + x_{10} + x_{15} = 1$
 $x_1 + x_{10} + x_{15} = 1$
 $x_1 + x_7 + x_{16} + x_{17} + x_{18} + x_{19} + x_{20} = 1$
 $x_3 + x_4 + x_5 + x_9 + x_{13} + x_{14} = 1$
 $x_2 + x_7 + x_{11} + x_{12} + x_{16} + x_{17} + x_{18} + x_{19} + x_{20} + x_{21} + x_{23} = 1$
 $x_3 + x_4 + x_5 + x_{13} + x_{14} = 1$
 $x_3 + x_4 + x_5 + x_8 + x_{13} + x_{14} = 1$
 $x_3 + x_4 + x_5 + x_8 + x_{13} + x_{14} = 1$
 $x_3 + x_4 + x_5 + x_9 + x_{13} + x_{14} + x_{21} + x_{22} + x_{23} + x_{24} = 1$
 $x_6 + x_{10} + x_{15} + x_{21} + x_{22} + x_{23} + x_{24} + x_{25} = 1$
 $x_3 + x_4 + x_5 + x_9 + x_{13} + x_{14} = 1$
 $x_3 + x_4 + x_5 + x_9 + x_{13} + x_{14} + x_{25} = 1$
 $x_1 + x_9 + x_{11} + x_{12} + x_{21} + x_{22} + x_{23} + x_{24} + x_{25} = 1$
 $x_3 + x_4 + x_5 + x_7 + x_{13} + x_{14} + x_{16} + x_{17} + x_{18} + x_{19} + x_{20} = 1$
 $x_2 + x_9 + x_{11} + x_{12} + x_{25} = 1$
 $x_1 + x_{10} + x_{15} = 1$
 $x_2 + x_7 + x_{11} + x_{12} = 1$
 $x_2 + x_7 + x_8 + x_{11} + x_{12} + x_{16} + x_{17} + x_{21} + x_{22} + x_{23} + x_{24} = 1$
 $x_6 + x_9 + x_{15} + x_{25} = 1$
 $x_3 + x_4 + x_5 + x_7 + x_{13} + x_{14} = 1$
 $x_2 + x_8 + x_{11} + x_{12} + x_{16} + x_{17} + x_{18} + x_{19} + x_{20} + x_{21} + x_{22} + x_{23} + x_{24} = 1$
 $x_1 + x_{10} + x_{15} = 1$
 $x_3 + x_4 + x_5 + x_7 + x_9 + x_{13} + x_{14} + x_{21} + x_{22} + x_{23} + x_{24} = 1$
 $x_3 + x_4 + x_5 + x_9 + x_{13} + x_{14} + x_{21} + x_{22} + x_{23} + x_{24} = 1$
 $x_1 + x_3 + x_4 + x_9 + x_{11} + x_{12} + x_{13} + x_{14} + x_{21} + x_{22} + x_{23} + x_{24} + x_{25} = 1$
 $x_3 + x_4 + x_5 + x_8 + x_{13} + x_{14} = 1$

LP OPTIMUM FOUND AT STEP 0

OBJECTIVE FUNCTION VALUE

1) 254.5000

VARIABLE	VALUE	REDUCED COST
X1	1.000000	0.000000
X2	1.000000	0.000000
X3	0.000000	0.000000
X4	0.000000	4.130001
X5	1.000000	0.000000
X6	1.000000	0.000000
X7	0.000000	0.000000
X8	0.000000	0.000000
X9	0.000000	0.000000
X10	0.000000	0.000000
X11	0.000000	0.000000

X12	0.000000	2.260002
X13	0.000000	1.439998
X14	0.000000	0.750000
X15	0.000000	0.000000
X16	0.000000	0.000000
X17	0.000000	0.499998
X18	0.000000	1.199999
X19	0.000000	0.170000
X20	0.000000	0.570002
X21	0.000000	80.930000
X22	0.000000	72.529999
X23	0.000000	80.269997
X24	0.000000	71.709999
X25	0.000000	0.000000

ROW	SLACK OR SURPLUS	DUAL PRICES
2)	0.000000	0.000000
3)	0.000000	0.000000
4)	0.000000	-76.459999
5)	0.000000	0.000000
6)	0.000000	0.000000
7)	0.000000	0.000000
8)	0.000000	0.000000
9)	0.000000	0.000000
10)	0.000000	0.000000
11)	0.000000	0.000000
12)	0.000000	0.000000
13)	0.000000	0.000000
14)	0.000000	0.000000
15)	0.000000	0.000000
16)	0.000000	18.600000
17)	0.000000	0.000000
18)	0.000000	-188.070007
19)	0.000000	-14.760000
20)	0.000000	0.000000
21)	0.000000	115.680000
22)	0.000000	0.000000
23)	0.000000	-151.610001
24)	0.000000	0.000000
25)	0.000000	-17.040001
26)	0.000000	0.000000
27)	0.000000	-32.169998
28)	0.000000	-56.669998
29)	0.000000	97.500000
30)	0.000000	-60.919998
31)	0.000000	38.630001
32)	0.000000	72.790001

NO. ITERATIONS= 0

RANGES IN WHICH THE BASIS IS UNCHANGED:

VARIABLE	OBJ COEFFICIENT RANGES		
	CURRENT COEF	ALLOWABLE INCREASE	ALLOWABLE DECREASE
X1	32.799999	INFINITY	35.855000
X2	68.099998	INFINITY	23.903334
X3	40.070000	0.750000	INFINITY

X4	44.200001	INFINITY	4.129997
X5	78.699997	INFINITY	INFINITY
X6	74.900002	INFINITY	INFINITY
X7	54.110001	INFINITY	INFINITY
X8	35.840000	INFINITY	INFINITY
X9	28.980000	71.709999	INFINITY
X10	38.070000	35.855000	INFINITY
X11	44.230000	2.260002	INFINITY
X12	46.490002	INFINITY	2.260004
X13	41.509998	INFINITY	1.439995
X14	40.820000	INFINITY	0.749996
X15	55.110001	INFINITY	INFINITY
X16	32.169998	0.170002	INFINITY
X17	32.669998	INFINITY	0.500000
X18	33.369999	INFINITY	1.200001
X19	32.340000	INFINITY	0.170002
X20	32.740002	INFINITY	0.570004
X21	34.049999	INFINITY	80.930008
X22	25.650000	INFINITY	72.530006
X23	33.389999	INFINITY	80.270004
X24	24.830000	INFINITY	71.710007
X25	46.959999	INFINITY	71.709999

RIGHTHAND SIDE RANGES			
ROW	CURRENT RHS	ALLOWABLE INCREASE	ALLOWABLE DECREASE
2	1.000000	0.000000	0.000000
3	1.000000	0.000000	0.000000
4	1.000000	0.000000	0.000000
5	1.000000	0.000000	0.000000
6	1.000000	0.000000	0.000000
7	1.000000	0.000000	0.000000
8	1.000000	0.000000	0.000000
9	1.000000	0.000000	0.000000
10	1.000000	0.000000	0.000000
11	1.000000	0.000000	0.000000
12	1.000000	0.000000	0.000000
13	1.000000	0.000000	0.000000
14	1.000000	0.000000	0.000000
15	1.000000	0.000000	0.000000
16	1.000000	0.000000	0.000000
17	1.000000	0.000000	0.000000
18	1.000000	0.000000	0.000000
19	1.000000	0.000000	0.000000
20	1.000000	0.000000	0.000000
21	1.000000	0.000000	0.000000
22	1.000000	0.000000	0.000000
23	1.000000	0.000000	0.000000
24	1.000000	0.000000	0.000000
25	1.000000	0.000000	0.000000
26	1.000000	0.000000	0.000000
27	1.000000	0.000000	0.000000
28	1.000000	0.000000	0.000000
29	1.000000	0.000000	0.000000
30	1.000000	0.000000	0.000000
31	1.000000	1.000000	0.000000
32	1.000000	0.000000	0.000000