**Change the price parameter of supplier 6**

**Price=81**

Lambda=10;

Lr=1;

Lw=[2,3,3,4,6,7];

Ow=[1500,1000,2000,800,4000,4800];

Pw=[84,85.0,83,83.5,82.8,81];

%Pw=[84.0,84.5,83.2,83.5,82.8,82.5];

Or=500;

BigM=[180,160,150,190,180,210];

qw=[0.970,0.975,0.945,0.955,0.950,0.945]; %Perfect Rate

qr=0.95; %Target Perfect Rate

Node Left Iinf Objective Best Relaxatn Best Incumbent

------ ------ ------ -------------- -------------- --------------

1 0 11 -8.302154e+002 -8.302154e+002 6.273888e+004

10 9 9 -8.289486e+002 -8.296567e+002 -3.133905e+002

20 19 INFEASIBLE pr -7.087960e+002 -3.194905e+002

30 27 8 -6.290508e+002 -7.024704e+002 -3.194905e+002

40 37 6 -6.735623e+002 -6.745059e+002 -3.194905e+002

50 47 6 -6.419672e+002 -6.726057e+002 -5.432576e+002

60 47 INFEASIBLE pr -6.551502e+002 -5.432576e+002

70 43 6 -6.250055e+002 -6.349125e+002 -5.432576e+002

80 53 INFEASIBLE pr -6.290508e+002 -5.432576e+002

90 45 INFEASIBLE pr -6.248511e+002 -5.432576e+002

100 41 9 -6.180173e+002 -6.207914e+002 -5.432576e+002

110 41 10 -5.634435e+002 -6.180173e+002 -5.432576e+002

120 37 INFEASIBLE pr -6.123251e+002 -5.432576e+002

130 35 -5.328301e+002 pr -5.890938e+002 -5.432576e+002

140 25 8 -5.576109e+002 -5.635061e+002 -5.432576e+002

150 19 6 -5.553241e+002 -5.583224e+002 -5.432576e+002

160 13 INFEASIBLE pr -5.552858e+002 -5.432576e+002

170 7 -5.354457e+002 pr -5.483516e+002 -5.432576e+002

180 3 -5.427263e+002 pr -5.436265e+002 -5.432576e+002

EXIT: Optimal solution found.

Final Statistics for MIP

------------------------

Final objective value = -5.43274828013742e+002

Final integrality gap (abs / rel) =-1.33e-006 / -2.45e-009 (-0.00)

# of nodes processed = 187

# of subproblems processed = 187

Total program time (secs) = 790.092 ( 796.354 CPU time)

Time spent in evaluations (secs) = 789.853

===========================================================================

>> x

x =

6 0 0 10 0 0 1 0 0 1 0 0 2 101 -5

**Price=80**

Node Left Iinf Objective Best Relaxatn Best Incumbent

------ ------ ------ -------------- -------------- --------------

1 0 11 -9.269715e+002 -9.269715e+002 6.268888e+004

10 9 8 -7.443693e+002 -7.444730e+002 -4.487961e+002

20 19 7 -7.439317e+002 -7.440548e+002 -4.487961e+002

\* 20 19 r -4.502384e+002

30 25 5 -7.429833e+002 -7.434133e+002 -4.502384e+002

40 35 6 -7.411151e+002 -7.423119e+002 -4.515805e+002

50 43 6 -6.612864e+002 -7.418980e+002 -4.515805e+002

60 49 6 -6.551838e+002 -7.411151e+002 -4.597555e+002

70 59 8 -6.971603e+002 -7.403451e+002 -4.597555e+002

80 69 8 -7.077536e+002 -7.088044e+002 -4.597555e+002

90 79 8 -6.935535e+002 -6.971720e+002 -5.466145e+002

100 87 6 -6.685854e+002 -6.941748e+002 -5.549289e+002

110 93 INFEASIBLE pr -6.918799e+002 -5.549289e+002

120 99 INFEASIBLE pr -6.689646e+002 -5.549289e+002

130 101 -5.220057e+002 pr -6.658531e+002 -5.549289e+002

140 97 8 -6.587220e+002 -6.599470e+002 -5.549289e+002

150 99 -5.132202e+002 pr -6.587220e+002 -5.549289e+002

160 105 9.327270e+001 pr -6.528940e+002 -5.549289e+002

170 107 9.887754e+001 pr -6.515953e+002 -5.549289e+002

180 111 6 -6.427983e+002 -6.472465e+002 -5.867214e+002

190 117 INFEASIBLE pr -6.463547e+002 -5.867214e+002

200 115 INFEASIBLE pr -6.457571e+002 -5.867214e+002

210 115 4 -6.439163e+002 -6.448702e+002 -5.867214e+002

220 119 INFEASIBLE pr -6.446223e+002 -5.867214e+002

230 111 INFEASIBLE pr -6.442618e+002 -5.867214e+002

240 105 5 -6.156071e+002 -6.429778e+002 -5.867214e+002

\* 240 105 r -6.028659e+002

250 103 INFEASIBLE pr -6.403748e+002 -6.112656e+002

260 97 5 -6.327275e+002 -6.377543e+002 -6.112656e+002

270 99 INFEASIBLE pr -6.365260e+002 -6.112656e+002

280 89 INFEASIBLE pr -6.354406e+002 -6.112656e+002

290 87 4.609378e+001 pr -6.337329e+002 -6.112656e+002

300 77 7 -6.301409e+002 -6.315725e+002 -6.112656e+002

310 71 3 -6.147638e+002 -6.280225e+002 -6.112656e+002

320 69 INFEASIBLE pr -6.197915e+002 -6.112656e+002

330 69 -6.138504e+002 pr -6.148104e+002 -6.140668e+002

340 65 -6.125129e+002 pr -6.144881e+002 -6.141048e+002

EXIT: Optimal solution found.

Final Statistics for MIP

------------------------

Final objective value = -6.14238359748117e+002

Final integrality gap (abs / rel) =-2.09e-008 / -3.40e-011 (-0.00)

# of nodes processed = 347

# of subproblems processed = 347

Total program time (secs) = 1621.417 ( 1628.416 CPU time)

Time spent in evaluations (secs) = 1618.883

===========================================================================

>> x

x =

8 0 0 0 0 18 1 0 0 0 0 1 3 100 -5

**Price=80.5**

Node Left Iinf Objective Best Relaxatn Best Incumbent

------ ------ ------ -------------- -------------- --------------

1 0 11 -8.766124e+002 -8.766124e+002 6.271388e+004

10 9 10 -7.042293e+002 -8.761697e+002 -3.828656e+002

20 19 10 -5.900717e+002 -7.088044e+002 -3.861389e+002

30 27 INFEASIBLE pr -7.041434e+002 -3.861389e+002

40 35 8 -6.754477e+002 -6.810478e+002 -3.861389e+002

\* 40 35 r -3.962208e+002

50 45 6 -6.593391e+002 -6.806390e+002 -4.151136e+002

\* 50 45 r -4.257450e+002

60 53 7 -6.604378e+002 -6.754477e+002 -4.320857e+002

\* 60 53 r -4.409324e+002

70 63 INFEASIBLE pr -6.737114e+002 -4.409324e+002

80 69 INFEASIBLE pr -6.632484e+002 -5.432748e+002

90 67 7 -5.971592e+002 -6.609375e+002 -5.432748e+002

100 67 7 -6.448346e+002 -6.450157e+002 -5.432748e+002

110 75 INFEASIBLE pr -6.433601e+002 -5.432748e+002

120 75 6 -6.249442e+002 -6.348825e+002 -5.432748e+002

130 73 8 -6.246995e+002 -6.270780e+002 -5.432748e+002

140 75 INFEASIBLE pr -6.262904e+002 -5.432748e+002

150 71 9 -5.733212e+002 -6.246995e+002 -5.432748e+002

160 71 6 -6.109061e+002 -6.235301e+002 -5.432748e+002

170 67 8 -5.575071e+002 -6.187861e+002 -5.432748e+002

180 67 INFEASIBLE pr -6.064445e+002 -5.432748e+002

190 65 4 -5.708323e+002 -5.929737e+002 -5.432748e+002

200 59 9.743837e+006 pr -5.712666e+002 -5.432748e+002

210 49 INFEASIBLE pr -5.681628e+002 -5.432748e+002

220 43 3 -5.481921e+002 -5.617308e+002 -5.468133e+002

230 37 -5.349246e+002 pr -5.569671e+002 -5.468133e+002

240 27 -3.944822e+002 pr -5.527748e+002 -5.468133e+002

250 21 -5.473119e+002 pr -5.482567e+002 -5.482180e+002

EXIT: Optimal solution found.

Final Statistics for MIP

------------------------

Final objective value = -5.48217955425884e+002

Final integrality gap (abs / rel) =-2.51e-007 / -4.58e-010 (-0.00)

# of nodes processed = 255

# of subproblems processed = 255

Total program time (secs) = 1272.934 ( 1277.243 CPU time)

Time spent in evaluations (secs) = 1271.227

===========================================================================

>> x

x =

9 0 0 0 0 17 1 0 0 0 0 1 2 102 -5

**P=81.5**

Node Left Iinf Objective Best Relaxatn Best Incumbent

------ ------ ------ -------------- -------------- --------------

1 0 11 -7.884176e+002 -7.884176e+002 6.276388e+004

10 7 8 -7.087548e+002 -7.878711e+002 -1.861940e+002

\* 10 7 r -1.968492e+002

20 17 7 -7.069625e+002 -7.084779e+002 -2.853977e+002

\* 20 17 r -2.908248e+002

30 27 6 -6.739242e+002 -6.745059e+002 -3.122095e+002

40 35 -5.372274e+002 pr -6.734431e+002 -5.432576e+002

50 37 4 -6.305021e+002 -6.696017e+002 -5.432576e+002

60 37 5 -6.408902e+002 -6.417881e+002 -5.432576e+002

70 41 5 -6.339200e+002 -6.405542e+002 -5.432576e+002

80 41 4 -6.240173e+002 -6.339200e+002 -5.432576e+002

90 51 INFEASIBLE pr -6.305021e+002 -5.432576e+002

100 49 -5.347439e+002 pr -6.284223e+002 -5.432576e+002

110 39 INFEASIBLE pr -6.263596e+002 -5.432576e+002

120 35 INFEASIBLE pr -6.238571e+002 -5.432576e+002

130 31 INFEASIBLE pr -6.116772e+002 -5.432576e+002

140 21 -4.285646e+002 pr -5.758893e+002 -5.432576e+002

150 19 -5.004507e+002 pr -5.611902e+002 -5.432576e+002

160 13 3 -5.435907e+002 -5.447074e+002 -5.432576e+002

170 11 -5.427263e+002 pr -5.435907e+002 -5.432576e+002

EXIT: Optimal solution found.

Final Statistics for MIP

------------------------

Final objective value = -5.43274828013742e+002

Final integrality gap (abs / rel) =-1.96e-007 / -3.60e-010 (-0.00)

# of nodes processed = 179

# of subproblems processed = 179

Total program time (secs) = 920.126 ( 922.169 CPU time)

Time spent in evaluations (secs) = 919.647

===========================================================================

>> x

x =

6 0 0 10 0 0 1 0 0 1 0 0 2 101 -5