! Example 2 from section 11.4 (page 483);

! A binary programming example from your friendly LINGO expert, John Kawamura;

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!Objective Function;

Max = y11 + 3\*y12 + 3\*y13 + 2\*y22 + 3\*y23 - y31 + 2\*y32 + 4\*y33;

! subject to...;

y11 + y12 + y13 <= 1;

y21 + y22 + y23 <= 1;

y31 + y32 + y33 <= 1;

y11 + 2\*y12 + 3\*y13 + y21 + 2\*y22 + 3\*y23 + y31 + 2\*y32 + 3\*y33 = 5;

! The function @BIN() defines variables to be binary.

This function can also be embedded within a @FOR() function in order to define binary variables over sets.

 @GIN() defines variables to be integers.

 When using LINGO format, one inserts these expressions after the "END"

 statement.;

@BIN(y11);

@BIN(y12);

@BIN(y13);

@BIN(y21);

@BIN(y22);

@BIN(y23);

@BIN(y31);

@BIN(y32);

@BIN(y33);

!solution screen:

 Global optimal solution found.

 Objective value: 7.000000

 Objective bound: 7.000000

 Infeasibilities: 0.000000

 Extended solver steps: 0

 Total solver iterations: 0

 Variable Value Reduced Cost

 Y11 0.000000 -1.000000

 Y12 1.000000 -3.000000

 Y13 0.000000 -3.000000

 Y22 0.000000 -2.000000

 Y23 0.000000 -3.000000

 Y31 0.000000 1.000000

 Y32 0.000000 -2.000000

 Y33 1.000000 -4.000000

 Y21 0.000000 0.000000

 Row Slack or Surplus Dual Price

 1 7.000000 1.000000

 2 0.000000 0.000000

 3 1.000000 0.000000

 4 0.000000 0.000000

 5 0.000000 0.000000