



Remember

1. SETS Structures consisting of indices or names
2. DATA SCALARS (zero-dimensional), PARAMETERS (one-dimensional), and TABLES (multi-dimensional)
Determination of values of input parameters
3. VARIABLES Variables or arrays of variables
Declaration with assigning a type of variable
Declaration of limits for possible changes, initial level
4. EQUATIONS Equations or complexes and arrays of equations (includes both declaration and definition)
5. MODEL Model declaration (which equations to include)
6. SOLVE Method of solution (which algorithm to use)
7. OUTPUT Output of information to files

Variable Type	Allowed Range of Variable
Free	$-\infty$ to $+\infty$
Positive	0 to $+\infty$
Negative	$-\infty$ to 0
Binary	0 or 1
Integer	0,1,....., 100

lp for linear programming
 nlp for nonlinear programming
 =l= less than or equal to
 =g= greater than or equal to
 =e= equal to
 .lo lower bound
 .l level or primal value
 .up upper bound

Perform the following exercise:

$$\text{Min } (x + 3)^2 * y^2 * z^2$$

(Note: Use BARON-NLP solver)

Subject to

$$2x + y \leq 30$$

$$x + y = 20$$

$$z \geq 4$$

$$x, y, z \geq 0$$

The result will be

$$x = 0, y = 20, z = 4, f = 57600$$

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