There are practice exercises related to formulation (set up) of linear programming problems.

Steps of "set up" for typical Linear Programming Problems (from Lectures #29-31).

- Constructing the Model for an Applied Linear Programming Problem.

1. Introduce decision variables.
2. Summarize relevant material (in table form).
3. Determine the objective and write a linear objective function.
4. Write problem constraints using linear equations and inequalities.
5. Write nonnegative constraints.

In the textbook (p. 296-297 PART II) are given good examples of real world problems optimization problems that require Linear Programming Methods for solving.

Number of variables and number of problem constraints may vary, but the way of formulation is the same for all varieties: steps 1-5.

For extra practice with "set up" part of the Linear Programming Problems, you may use the following examples.

Example #1. Nutrition. (based on # 74 p. 219, PART II).
A dietitian in a hospital is to arrange a special diet composed of three basic foods. The diet is to include exactly 400 units of calcium, 160 units of iron, and 240 units of vitamin A.
The number of units per ounce of each special ingredient for each of the foods is indicated in the table.

	Units per Ounce		
	Food A	Food B	Food C
Calcium	30	10	20
Iron	10	10	20
Vitamin A	10	30	20

The cost of one ounce of food A cost 25 cents, 45 cents for food B, and 55 cents for food C.
How many ounces of each food must be used to meet the diet requirements and at the same time minimize the cost of diet?

Example 2. (#42 p.302 PART II).
A dietitian in a hospital is to arrange a special diet composed of two foods, M and N. Each once of food M contains 10 units of calcium, 10 units of iron, 10 units of vitamin A, and 8 units of cholesterol. Each ounce of food N contains 10 units of calcium, 10 units of iron, 30 units of vitamin A, and 4 units of cholesterol. If the minimum daily requirements are 360 units of calcium, 160 units of iron, and 240 units of vitamin a, how many ounces of each food should be used to meet the minimum requirements and at the same time minimize the cholesterol intake?

##41, 43, 44, 45, 46 p. 302-303 demonstrate varieties of "formal description", however, mathematical formulation for all these problems is uniform.
Use these problems for practice to gain better understanding.