Diet problem

A canteen has to plan the composition of the meals that it provides. A meal can be composed of the types of food indicated in the following table. Costs, in Euro per hg, and availabilities, in hg, are also indicated.

Food	Cost	Availability
Bread	0.1	4
Milk	0.5	3
Eggs	0.12	1
Meat	0.9	2
Cake	1.3	2

A meal must contain at least the following amount of each nutrient

Nutrient	Minimal quantity
Calories	600 cal
Proteins	50 g
Calcium	0.7 g

Each hg of each type of food contains to following amount of nutrients

Food	Calories	Proteins	Calcium
Bread	30 cal	5 g	0.02 g
Milk	50 cal	15 g	0.15 g
Eggs	150 cal	30 g	0.05 g
Meat	180 cal	90 g	0.08 g
Cake	400 cal	70 g	0.01 g

Give a linear programming formulation for the problem of finding a diet (a meal) of minimum total cost which satisfies the minimum nutrient requirements.