Cars and microcars

Difficulty level: beginner

Keywords

- Production
- Linear Programming
- Graphical method

Problem description

The *BrumBrumBrum* company produces cars and microcars by using two machines denoted by P and Q. Both machines are used to produce both vehicles, but the processing times are different: for each car, it takes one hour of processing on P and three hours on Q; for each microcar, it takes two hours of processing on P and two hours on Q. For logistical reasons, no more than eighteen cars per week can be produced. Furthermore, P cannot be used for more than 40 hours a week, while Q for no more than 60. Assuming that each product manufactured is then put on sale, determine which is the most convenient production combination, also knowing that each car is sold for € 16,000 and each microcar for € 10,000.

Tasks

1. Formulate the mathematical model by applying Linear Programming.
2. Find an optimal solution to the problem by using the graphical method.
3. Is the solution found realistic? Why?