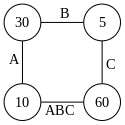
**Question 1:** A person urgently needs 40kg of rice. He has only one shop to buy from. There are four qualities of rice at the shop: q1, q2, q3 and q4. The quantities in the stock along with their total prices are 5kg(PKR 600), 10kg(PKR 1300), 15kg(PKR 1500) and 20kg(PKR 2100) respectively. The person prefers low cost over quality. Give a solution i.e., the person buys best possible combination of rice, cost-wise.

**Question 2:** Suppose, there are four sides: A, B, C and the final result is ABC. A is a 10×30 matrix, B is a 30×5 matrix, C is a 5×60 matrix, and the final result is a 10×60 matrix; the regular polygon for this example is a 4-gon, i.e. a square. In which order should the matrices be multiplied?

[](https://wikivisually.com/wiki/File:Matrix_chain_multiplication_polygon_example.svg)

**Question 3:** In the supermarket there are 5 packages with the profit of 4, 2, 1, 2, 10 and their weights are 12, 2, 1, 1, and 4. A thief breaks into the supermarket, the thief cannot carry weight exceeding 17kg. Design a dynamic programming algorithm to find which packages the thief will take away to get the highest value.