12.1. The mage has n spells and m mana points. The i-th spell needs c_i mana points and deals d_i damage to the enemy. Kill a monster with h health points using as little mana as possible. Time $O(nm)$.

12.2. Team of Peter and Paul won n prizes in a programming contest, with a total value of r. They want to divide them among themselves so that the difference in total cost is minimal. Time $O(nr)$.

12.3. The same task, but time $O(n \cdot 2^{n/2})$.

12.4. Team of Peter and Paul again won $n = 2k$ prizes with a total value of r. They want to divide them among themselves so that everyone gets k prizes, and the difference in total cost is minimal. Time $O(n^2 r)$.

12.5. The same task, but time $O(n \cdot 2^{n/2})$.

12.6. Peter and Paul called their friend Mary and they won another contest, wey got n prizes with a total value of r. They want to divide them so that the difference between the maximum and minimum shares is minimal. Time $O(nr^2)$.

12.7. Given a graph, paint its vertices in the minimum number of colors so that each edge connects vertices of different colors. Time $O(3^n)$.

12.8. Peter solves the knapsack problem without costs (you need to find the maximum total weight no more than S) with a greedy algorithm, it works like this. Let some items have already been taken, and their total weight is equal to T, then at the next step of the algorithm Peter will take the item with the maximum weight among those for which $T + w_i \leq S$. If there are none, then the algorithm terminates. Let this algorithm get a set with the sum ANS, and the optimal answer is OPT. On which test will the ANS/OPT ratio be minimal?