279. Perfect Squares

题目描述：https://leetcode.com/problems/perfect-squares/

> 把一个数拆成最小数目的完全平方数加和， 例如：
>
> ```
> given n = 12, return 3 because 12 = 4 + 4 + 4
> given n = 13, return 2 because 13 = 4 + 9
> given n = 16, return 1 because 16 is a perfect square number.
> ```

解题思路：

动态规划，两种方式；
第一种:
dp[i] = min(dp[i],dp[k]+dp[i-k]), i is not a perfect square.
dp[i] = 1, i is a perfect square;
结果超时！！！ 第二种 dp[i] = min(dp[i], dp[i-k*k]+1), i is not a perfect square.
dp[i] = 1, i is a perfect square;

代码第二种：

```
class Solution {
public:
    bool isS(int k) {
        int t = sqrt(k);
        if(t * t == k)
            return true;
        return false;
    }
    int numSquares(int n) {
        vector<int> f(n+1, n);
        f[0] = 0; f[1] = 1;
        for(int i = 2; i <= n; i++) {
            if(isS(i)) {
                f[i] = 1;
            }
            else {
                for(int k = 1; k*k < i; k++) {
                    f[i] = min(f[i], 1 + f[i-k*k]);
                }
            }
        }
        return f[n];
    }
};
```