Homework Assignment #8
Due: March 27, 2023 at 7:00 p.m.

1. Let A be a set of n positive integers $a_1, a_2, \ldots, a_n$ and let s and t be positive integers, with $s \leq n$. We wish to count the number of s-element subsets of A that have the property that the sum of the squares of the elements in the subset is exactly t.

(a) Use dynamic programming to solve this problem. (Use the usual steps: define an array and state its size, give a definition in precise English of what should be stored in each entry of your array, give a recurrence for computing the entries, say what order to compute the entries, and say which entry of the array holds the final answer.)

(b) What is the worst-case running time of your algorithm? How much space does it use? State your answers using Θ notation in terms of n, s and t.