Formular= C(n+r−1,r)

Where n is the number of choices (in this case, the number of types of cookies) and r is the number of selections (in this case, the number of cookies chosen)

C(4+6−1,6) = C(9,6)= 6!x(9-6)!9!=6!x3!9!=84

C++ code is

#include <iostream>

unsigned long long combinationsWithReplacement(int n, int r) {

unsigned long long result = 1;

for (int i = 1; i <= r; ++i) {

result \*= (n + i - 1) / i;

}

return result;

}

int main() {

int numTypes = 4; // Number of different kinds of cookies

int numChoices = 6; // Number of cookies to be chosen

unsigned long long ways = combinationsWithReplacement(numTypes, numChoices);

std::cout << "Number of ways to choose " << numChoices << " cookies from " << numTypes << " different kinds: " << ways << std::endl;

return 0;

}