

## 1. PROGRAM 3 INSTRUCTIONS, CS101, PROF. LOFTIN

The sum of the squares of the first 10 positive integers is

$$1^2 + 2^2 + \dots + 10^2 = 385.$$

On the other hand, the square of the sum of the first 10 positive integers is

$$(1 + 2 + \dots + 10)^2 = 55^2 = 3025.$$

Therefore, the difference between the square of the sum and the sum of the squares of the first 10 positive integers is  $3025 - 385 = 2640$ .

Write a program that prompts the user for a positive integer, reads a single integer  $n$ , and then prints out

- the square of the sum of the first  $n$  positive integers.
- the sum of the squares of the first  $n$  positive integers.
- and the difference between the square of the sum and the sum of the squares.

Your program file should be entitled `Program3.java` and should be turned in through the Blackboard system. BE SURE YOU USE THE CORRECT CASE IN THE IDENTIFIER `Program3.java`. Click on the Tools button on your left, and click on the Digital Dropbox. Your program must compile and run on the `pegasus` server. Programs which do not compile will not be graded.

## 2. SAMPLE OUTPUT:

```
Enter a positive integer: 10
The square of the sum of the first 10 positive integers is 3025.
The sum of the squares of the first 10 positive integers is 385.
Their difference is 2640.
```