**Short (Shortcut) Class**

**Directions:**

1. Create the Short class that contains the following public, static methods

* *factorial(int n)*  - returns an integer: n!
* *combination(int n, int r)*  - returns an integer: n! / (r! \* (n – r)!)
* *permutation(int n, int k)* – returns an integer: n! / (n – k)!

2. Create another class, *ShortMain*, that contains a main method. Perform the rest of the instructions in the main method of *ShortMain*.

3. Print 7!

4. Determine how many ways a 4-person programming team can be chosen from 10 students. (Combination)

5. Determine how many ways 4 students can fill the rolls of President, Vice-President, and Treasurer. (Permutation)

Correct Printout)

7! = 5040

10 Combination 4 = 210

4 Permutation 3 = 24