1. The return type is long
2. Max cannot more than 100 since the size of arr is 100
3. The return type is long
4. If init(arr) is not there, then the code will take the values as null
5. The return type is long
6. Because at 1 the first number is 1 so we can manually add is by default and because there is no index before the first value in the array
7. The return type is long
8. If you start with 1 and do not initialize fact variable to 1 it will constantly multiply by 0 since it will by default set it to 0
9. It is declared as an array of longs because In Java, the range of type int is from –2,147,483,648 to 2,147,483,647 whereas, the range of type long is from –9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 which is very much greater than type int
10. No it doesn’t work, and it bring and IndexOutofBoundsException. You can fix it by setting the max variable to be the size of the initialized array for each run and each method declare a new array.