Module 27.5 Practice Problem Set

1. Write a program to print all prime numbers from 1 to n.

   You will be given an integer.

   Expected time complexity: O(N*log(n))

Sample Input	Sample output
10	2 3 5 7
9	2 3 5 7

   Reference: Sieve of Eratosthenes.

2. Write a program to evaluate a prefix expression.

   You will be given a prefix expression in string format. You have to print the result of the evaluation of the given prefix expression.

   Expected time complexity: O(N)

Sample Input	Sample output
*+69-31	30
-+8/632	8
*5-^622	170

3. Write a program to reverse a linked list using stack.
   Expected time complexity: O(N)

   Reference: Reverse linked list using stack.

4. Write a program to detect duplicate parenthesis at given expressions using stack.

For example: (((a+b))+((c+d))) a+b and c+d are surrounded by duplicate parenthesis.

You will be given a string. You need to check if the expression has a duplicate or not. If the expression has duplicates, print “YES”, otherwise print “NO”.

Expected time complexity: O(N) or O(N*N)

Sample Input	Sample output
(((a+b))+((c+d)))	YES
(a+b)+(c+d)	NO

Reference:Detect duplicate parenthesis

5. Write a program to check if the given string is a palindrome or not a palindrome using stack .

You will be given a String . You need to check if the string is a palindrome or not a palindrome . If the string is a palindrome, print “YES”, otherwise print “NO”.

Expected Time Complexity: O(N).

Sample Input	Sample output
wow	YES
abcdef	NO
abcdcba	YES

Reference: Palindrome

6. Write a program to reverse a string using stack.

   You are given a string.You have to print the reverse of the string .

   Expected Time Complexity: O(N).

Sample Input	Sample output
abcdef	fedcba
wow	wow

   Reference: Reverse linked list using stack