Lab worksheet 2: Introduction

1. Write a Java program to print out the numbers 10 through 49 in the following manner,

   10 11 12 13 14 15 16 17 18 19
   20 21 22 23 24 25 26 27 28 29
   30 31 32 33 34 35 36 37 38 39
   40 41 42 43 44 45 46 47 48 49

2. Write a method that returns the number of digits in an integer argument; for example, 23,498 has five digits. Using this method, write a Java program that repeatedly asks for input and displays the number of digits the input integer has. Stop the repetition when the input value is negative.

3. Write a Java program that prints a pattern of asterisks in the shape of a pyramid. The number of rows in the pyramid should be entered by the user.

4. Write a Java program that accepts five numbers as input from the user, stores them in an integer array, and then determines and displays the second-largest element in the array.

5. Write a Java program that checks whether a given sentence is a palindrome. To do this, you need to:
   - Use a StringTokenizer to split the sentence into words.
   - Ignore punctuation and spaces when checking for palindromes. For example, "A man, a plan, a canal, Panama!" should be considered a palindrome.
   - Convert each word to lowercase for case-insensitive comparison.
   - Output whether the sentence is a palindrome or not.