Pseudocode Problems Week 4

Instructions

- This week there are 5 problems for you to solve and write Pseudocode for.
- All 5 solutions should be on a single Notepad document and saved using your student number and name (e.g NoelCarey_B000123456.txt)
- When writing your solutions, keep in mind the 5 standard guide points.
    1. Progam explanation at the start.
    2. One statement per line.
    3. Use of white space and indentation.
    4. Capitalisng of Key Words and good structure
    5. Correct logic and flow.
- Upload your single text file to the appropriate moodle section.
- REMEMBER: your task here is to write Pseudocode and get the logic and structure of the program correct. You don't need to know all the nuts and bolts of a programming language.

Don't forget your program Structure Guide:

//Declare variables
//Get input from user
//Processing
//Output or Results

Symbol	Meaning
<	**Less than**
>	**Greater than**
<=	**Less than or equal to**
>=	**Greater than or equal to**
==	**Equal to**
!=	**Not equal to**
&&	**Logical AND**
||	**Logical OR**

Question 1

Write a Java program that evaluates and prints the **truth** or **falsity** of the following expressions; **you should assign the outcome of each expression to a Boolean variable**.

2 * 3 == 6 && 4 < 5

3 > 1 || 5 < 3

1 < 10 && 2 < 10 && 3 < 10

!(3 > 10) && 5 != 4

(10 >= 10) && (11 >= 10)

Question 2

Write a Pseudocode program to read an integer value from the user and print one of 3 options that the number can be. The three options are shown below. (Hint use IF, ELSE IF and ELSE)

1. positive,
2. negative
3. zero.

Question 4

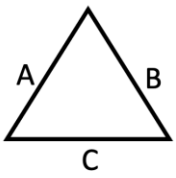
Write a Pseudocode program that read in a student's grade (0 – 100) from the user and prints the associated alphabetic grade. Use the table below in your answer.

GRADE	PERCENTAGE BAND
A	80 – 100
B+	70 < 79
B	60 < 69
B-	55 < 59
C+	50 < 54
C	40 < 49
D	35 < 39
F	< 34

```
Please enter your grade (0-100): 81
A
Please enter your grade (0-100): 56
B-
Please enter your grade (0-100): 51
C+
Please enter your grade (0-100): 23
F
```

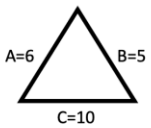
Question 5

Write a program to read the lengths of three sides of a triangle (**A**, **B** and **C**) and prints one of **TRIANGLE** or **NOT A TRIANGLE**. (Hint - triangle inequality theorem)
For an explanation of the Triangle Inequality Theorem follow the link below
https://www.mathwarehouse.com/geometry/triangles/triangle-inequality-theorem-rule-explained.php

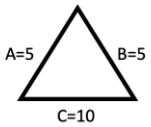


Triangle Inequality Theorem
The sum of the two shortest sides must be greater than the longest side.

NOTE: But first we must determine the longest side?

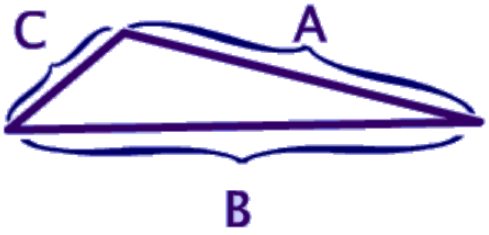


C is the longest side so (6 + 5 > 10) == true ✔



C is the longest side but 5 + 5 > 10 == false ✗

The Triangle Inequality Theorem



$A + B > C$

$B + C > A$

$A + C > B$