Practice problems on control flow statement and loop

1. Write a program which prints the following pattern (triangle). Your program will take as input an integer **n** (number of stars along base and height of the triangle) and print the pattern accordingly.

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| Sample Input | Sample Output |
| 3 | \*  \*\*  \*\*\* |
| 4 | \*  \*\*  \*\*\*  \*\*\*\* |

1. Write a C program to check whether a character given as input is an alphabet or not. If it is an alphabet, then it should also specify whether it is a vowel or a consonant.

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| Sample Input | Sample Output |
| ? | Not an alphabet |
| R | Alphabet  Consonant |
| E | Alphabet  Vowel |

1. Write a C program that will take three numbers as input which denote the length of three sides of a triangle. The program will output the area of the triangle if it is a valid one. Otherwise, it will write "No triangle possible".

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| Sample Input | Sample Output |
| 1.0 1.9 3.0 | No triangle possible |
| 3.0 4.0 5.0 | 6.0 |

1. Electricity bill at a certain power distribution company is computed as follows:  
   First 50 units: BDT 4 per unit  
   Next 30 units: BDT 3 per unit  
   Next 20 units: BDT 2 per unit  
   Next any units: BDT 1 per unit  
   Write a C program that will take number of units used this month and calculate the bill in BDT.

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| Sample Input | Sample Output |
| 102.5 | BDT 332.5 |
| 25 | BDT 100 |

1. Write a program that takes an integer n and computes the factorial of n. (n!)

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| Sample Input | Sample Output |
| 3 | 6 |
| 5 | 120 |

1. Write a program that takes an integer and determines whether it is a prime number or not.

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| Sample Input | Sample Output |
| 31 | 31 is a prime |
| 25 | 25 is not a prime |

1. Write a program which takes an integer **n** as input and output the sum of the following series.

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| Sample Input | Sample Output |
| 5 | 2.283 |
| 20 | 3.5977 |