



# **Competitive Programming**

## **iC-PROM 2017**

### **MOCK (SOLUTION)**

**This problem set contains 2 questions (A – B)**

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***Organized by***

**Computer Science Department, UiTM Perlis**

<b>PROBLEM A</b>	<b>“X POWER OF Y” GENERATOR</b>
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The power of a number can be defined as how many times a number is used in a multiplication. It is written as a small number to the right and above the base number.

Example:

$$2^3 = 2 \times 2 \times 2$$

In this example, 2 is the base number and 3 is the power.

### Input

The first line of the input contains an integer to represent the base number. Following the first line are 3 values of power to be calculated.

The input must be read from standard input.

### Output

The output of the program should print the results produced by the power calculation.

The output must be written to standard output.

Sample Input	Sample Output
2 3 5 7	9 25 49

## PROBLEM A

## “X POWER OF Y” GENERATOR

```
import java.util.*;
import java.lang.*;

public class PowerOf
{
    public static void main(String [] args)
    {
        int base, i, j, power;
        double result[] = new double[3];
        Scanner in = new Scanner(System.in);

        base = in.nextInt();
        for (i = 0; i < 3; i++)
        {
            power = in.nextInt();
            result[i] = Math.pow(base, power);
        }
        for (j=0; j<3; j++)
        {
            System.out.println(result[j]);
        }
    }
}
```

## PROBLEM B

## PRINT ME A SQUARE PATTERN

Your lecturer give you a task to write a program to print a square pattern. The square pattern must be built according to user's preferences, such as the character used to print the square pattern and the numbers of rows and columns needed for the square pattern.

### Input

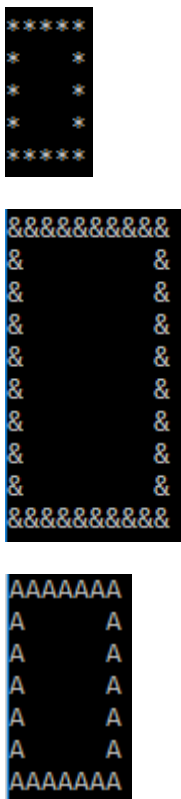
The first line of the input contains an integer  $N$  ( $1 \leq N \leq 5$ ), the number of test cases. Following the first line are the test cases. Each line of a test case contains a character and non-negative integer numbers, that represent the number of rows and columns. The non-negative number is smaller than 10 and the character could be a number, alphabet or symbol.

The input must be read from standard input.

### Output

The output of the program should display the square pattern.

The output must be written to standard output.

Sample Input	Sample Output
3 * 5 5 & 10 10 A 7 7	 <pre>***** *   * *   * *   * *   * *****  &amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp; &amp;               &amp; &amp;               &amp; &amp;               &amp; &amp;               &amp; &amp;               &amp; &amp;               &amp; &amp;               &amp; &amp;               &amp; &amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;&amp;  AAAAAAA A       A A       A A       A A       A A       A A       A AAAAAAA</pre>

## PROBLEM B

## PRINT ME A SQUARE PATTERN

```
#include<iostream>

using namespace std;

int main()
{
    int x, i, j, row, col, noCase;
    char symbol;

    cin>>noCase;
    for(x = 0; x<noCase; x++){
        cin>>symbol;
        cin>>row>>col;
        for(i = 1; i<=row; i++)
        {
            for(j = 1; j<=col; j++)
            {
                if(i == 1 || i == row)
                    cout<<symbol;
                else
                    if(j == 1 || j == col)
                        cout<<symbol;
                    else
                        cout<<" ";
            }
            cout<<endl;
        }
    }
}
```