



Here are the solutions for Tutorial 2:

## Question 1: Java program to convert exam marks to grades using a switch statement

The grade distribution is based on ranges, and since a `switch` statement doesn't support range comparisons directly, we can combine it with an `if-else` structure:

```
import java.util.Scanner;

public class MarksToGrade {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter your marks: ");
        int marks = input.nextInt();

        String grade;
        if (marks >= 70) {
            grade = "A";
        } else if (marks >= 60) {
            grade = "B";
        } else if (marks >= 50) {
            grade = "C";
        } else if (marks >= 40) {
            grade = "D";
        } else if (marks >= 30) {
            grade = "E";
        } else {
            grade = "F";
        }

        switch (grade) {
            case "A":
                System.out.println("Grade: A");
                break;
            case "B":
                System.out.println("Grade: B");
                break;
            case "C":
                System.out.println("Grade: C");
                break;
            case "D":
                System.out.println("Grade: D");
                break;
            case "E":
                System.out.println("Grade: E");
                break;
        }
    }
}
```

```
        break;
    case "F":
        System.out.println("Grade: F");
        break;
    default:
        System.out.println("Invalid marks.");
    }
}
}
```

**Question 2: Program that displays all multiples of 5 between 0 and 100 inclusive**

```
public class MultiplesOfFive {
    public static void main(String[] args) {
        for (int i = 0; i <= 100; i += 5) {
            System.out.println(i);
        }
    }
}
```

### Question 3: Program to input two integer values $x$ and $y$ and display the sum of their factorials

```
import java.util.Scanner;

public class FactorialSum {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter the first integer (x): ");
        int x = input.nextInt();

        System.out.print("Enter the second integer (y): ");
        int y = input.nextInt();

        int factorialX = factorial(x);
        int factorialY = factorial(y);

        int sum = factorialX + factorialY;

        System.out.println("The sum of factorials of " + x + " and " + y + " is: " + sum);
    }

    // Function to compute the factorial of a number
    public static int factorial(int num) {
        int result = 1;
        for (int i = 2; i <= num; i++) {
            result *= i;
        }
        return result;
    }
}
```

Let me know if you need any additional information or explanations on these programs!