Problem 1: Simple Calculator

Write a Java program that takes two numbers and an operator (+, -, *, /) and performs the corresponding arithmetic operation using a `switch` statement.

```java
Copy code
int num1 = 10, num2 = 5;
char operator = '+';

switch (operator) {
    case '+':
        System.out.println("Result: " + (num1 + num2));
        break;
    case '-':
        System.out.println("Result: " + (num1 - num2));
        break;
    case '*':
        System.out.println("Result: " + (num1 * num2));
        break;
    case '/':
        if (num2 != 0) {
            System.out.println("Result: " + (num1 / num2));
        } else {
            System.out.println("Cannot divide by zero.");
        }
        break;
    default:
        System.out.println("Invalid operator.");
}
```

Problem 2: Day of the Week

Write a Java program that takes an integer (1-7) and prints the corresponding day of the week using a `switch` statement.

```java
Copy code
int day = 3;

switch (day) {
    case 1:
        System.out.println("Sunday");
        break;
    case 2:
        System.out.println("Monday");
        break;
    case 3:
        System.out.println("Tuesday");
        break;
    case 4:
        System.out.println("Wednesday");
        break;
    case 5:
```

```java
            System.out.println("Thursday");
            break;
        case 6:
            System.out.println("Friday");
            break;
        case 7:
            System.out.println("Saturday");
            break;
        default:
            System.out.println("Invalid day number.");
}
```

Problem 3: Grade System

Write a Java program that assigns a letter grade (A, B, C, D, F) based on a percentage score using a switch statement.

```java
Copy code
char grade = 'B';

switch (grade) {
    case 'A':
        System.out.println("Excellent!");
        break;
    case 'B':
        System.out.println("Well done");
        break;
    case 'C':
        System.out.println("Good");
        break;
    case 'D':
        System.out.println("Passed");
        break;
    case 'F':
        System.out.println("Failed");
        break;
    default:
        System.out.println("Invalid grade.");
}
```

Problem 4: Traffic Light System

Write a Java program that simulates a traffic light using a switch statement. Depending on the color (red, yellow, green), the program will output what a driver should do.

```java
Copy code
String light = "yellow";

switch (light) {
    case "red":
        System.out.println("Stop!");
        break;
```

```java
        case "yellow":
            System.out.println("Slow down!");
            break;
        case "green":
            System.out.println("Go!");
            break;
        default:
            System.out.println("Invalid light color.");
    }
```