Q1.

```
import java.util.Scanner;

public class Name{
    public static void main(String[] args) {
      // Create a Scanner object to read input from the user
      Scanner scanner = new Scanner(System.in);

      // Prompt the user to enter their surname
      System.out.print("Please enter your surname: ");
      String surname = scanner.nextLine();

      // Prompt the user to enter their age
      System.out.print("Please enter your current age: ");
      int age = scanner.nextInt();

      // Calculate the number of characters in the surname
      int surnameLength = surname.length();

      // Determine if the age is even or odd
      String ageParity = (age % 2 == 0) ? "even" : "odd";

      // Print the results
      System.out.println("The number of characters in your surname is " + surnameLength + ".");
      System.out.println("Your current age is an " + ageParity + " number.");
   }
}
```

Q2.

```
import java.util.Scanner;
```

```
public class Main {
   public static void main(String[] args) {
      // Create a Scanner object to read input from the user
      Scanner scanner = new Scanner(System.in);

      // Array to store the marks of five units
      double[] marks = new double[5];
      double sum = 0;

      // Prompt the student to enter marks for five units
      for (int i = 0; i < 5; i++) {
         System.out.print("Please enter the marks for unit " + (i + 1) + ": ");
         marks[i] = scanner.nextDouble();
         sum += marks[i]; // Add the mark to the sum
      }

      // Calculate the average
      double average = sum / 5;

      // Display the average with two decimal places
      System.out.printf("The average marks of the five units is: %.2f%n", average);
   }
}
```

Q3.

```
import java.util.Scanner;

public class Main {
   public static void main(String[] args) {
```

```
    // Create a Scanner object to read input from the user
    Scanner scanner = new Scanner(System.in);

    // Prompt the user to enter an integer
    System.out.print("Please enter an integer: ");
    int number = scanner.nextInt();

    // Loop through the range of 1 to 9
    for (int i = 1; i <= 9; i++) {
        if (isDivisible(number, i)) {
            System.out.println("The number " + number + " is divisible by " + i + ".");
            // Additional explanation for divisibility by 5
            if (i == 5) {
                if (number % 10 == 0) {
                    System.out.println("This is because it ends with a 0.");
                } else if (number % 10 == 5) {
                    System.out.println("This is because it ends with a 5.");
                }
            }
        } else {
            System.out.println("The number " + number + " is not divisible by " + i + ".");
        }
    }
}

// Method to check divisibility
public static boolean isDivisible(int number, int divisor) {
    return number % divisor == 0;
}
```

```
}
```

Q4.

```
public class Multiples {
    public static void main(String[] args) {
        System.out.println("Multiples of 2, 3, and 7 within the range 71 to 150:");

        for (int i = 71; i <= 150; i++) {
            if (i % 2 == 0 || i % 3 == 0 || i % 7 == 0) {
                System.out.println(i);
            }
        }
    }
}
```

Q5.

```
import java.util.Scanner;

public class Calculator {
    public static void main(String[] args) {
        // Create a Scanner object to read input from the user
        Scanner scanner = new Scanner(System.in);

        // Prompt the user to enter the first number
        System.out.print("Enter the first number: ");
        double num1 = scanner.nextDouble();

        // Prompt the user to enter an operation
        System.out.print("Enter an operation (+, -, *, /): ");
        char operation = scanner.next().charAt(0);
```

```
// Prompt the user to enter the second number
System.out.print("Enter the second number: ");
double num2 = scanner.nextDouble();

// Variable to store the result
double result = 0;

// Perform the operation based on user input
switch (operation) {
    case '+':
        result = num1 + num2;
        break;
    case '-':
        result = num1 - num2;
        break;
    case '*':
        result = num1 * num2;
        break;
    case '/':
        if (num2 != 0) {
            result = num1 / num2;
        } else {
            System.out.println("Error: Division by zero is not allowed.");
            return; // Exit the program
        }
        break;
    default:
        System.out.println("Error: Invalid operation.");
        return; // Exit the program
```

```
        }

        // Display the result
        System.out.println("The result of the operation is: " + result);
    }
}
```