1)
```
import java.util.Scanner;

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



        System.out.print("Enter your age: ");
        int age = scanner.nextInt();



        System.out.print("Enter the time of the movie (in 24-hour format, e.g., 17 for 5 PM): ");
        int movieTime = scanner.nextInt();



        double ticketPrice = calculateTicketPrice(age, movieTime);



        System.out.println("Ticket Price: $" + ticketPrice);



        scanner.close();
    }

    public static double calculateTicketPrice(int age, int movieTime) {
        double ticketPrice;

        if (age >= 3 && age <= 12) {
            if (movieTime > 20) {
                ticketPrice = 12.0;
            } else {
```

```
            ticketPrice = 8.0;
        }
    } else if (age >= 13 && age <= 64) {
        if (movieTime > 20) {
            ticketPrice = 18.0;
        } else {
            ticketPrice = 12.0;
        }
    } else {
        ticketPrice = 0.0;
    }

    return ticketPrice;
  }
}
```

```
java -cp /tmp/9tSf2Y2raj MovieTicketCalculator
Enter your age: 12
Enter the time of the movie (in 24-hour format, e.g., 17 for 5 PM): 8
Ticket Price: $8.0
```

2)
```
import java.util.Scanner;

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

    System.out.print("Enter the student's score: ");
    int score = scanner.nextInt();
```

```
        char grade = assignLetterGrade(score);

        System.out.println("Letter Grade: " + grade);

        scanner.close();
    }

    public static char assignLetterGrade(int score) {
        char grade;

        if (score >= 90 && score <= 100) {
            grade = 'A';
        } else if (score >= 80 && score <= 89) {
            grade = 'B';
        } else if (score >= 70 && score <= 79) {
            grade = 'C';
        } else if (score >= 60 && score <= 69) {
            grade = 'D';
        } else {
            grade = 'F';
        }

        return grade;
    }
}
```

```
java -cp /tmp/9tSf2Y2raj GradeAssigner
Enter the student's score: 75
Letter Grade: C
```

3)
```
import java.util.Scanner;

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



        System.out.print("Enter the month (as an integer, e.g., 1 for January): ");
        int month = scanner.nextInt();



        String season = identifySeason(month);
        System.out.println("The season is: " + season);



        scanner.close();
    }

    public static String identifySeason(int month) {
        String season;

        switch (month) {
            case 1:
            case 2:
            case 12:
                season = "Winter";
                break;
            case 3:
            case 4:
            case 5:
                season = "Spring";
```

```
            break;
        case 6:
        case 7:
        case 8:
            season = "Summer";
            break;
        case 9:
        case 10:
        case 11:
            season = "Autumn";
            break;
        default:
            season = "Invalid month";
            break;
    }

    return season;
  }
}
```

```
java -cp /tmp/9tSf2Y2raj SeasonIdentifier
Enter the month (as an integer, e.g., 1 for January): 8
The season is: Summer
```

4)
```
import java.util.Scanner;

public class SimpleCalculator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
```

```
    System.out.print("Enter the first number: ");
    double num1 = scanner.nextDouble();

    System.out.print("Enter the operator (+, -, *, /): ");
    char operator = scanner.next().charAt(0);

    System.out.print("Enter the second number: ");
    double num2 = scanner.nextDouble();

    double result = calculate(num1, operator, num2);
    System.out.println("Result: " + result);

    scanner.close();
}

public static double calculate(double num1, char operator, double num2) {
    double result = 0.0;

    switch (operator) {
        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");
            }
            break;
        default:
            System.out.println("Error: Invalid operator");
            break;
    }

    return result;
  }
}
```

```
java -cp /tmp/9tSf2Y2raj SimpleCalculator
Enter the first number: 2
Enter the operator (+, -, *, /): +
Enter the second number: 5
Result: 7.0
```

```
5) public class EvenNumbers {
  public static void main(String[] args) {
    int number = 2;
    while (number <= 20) {
      System.out.println(number);
      number += 2;
```

```
        }
    }
}
6) public class SumOfNumbers {
    public static void main(String[] args) {
        int sum = 0;
        for (int i = 1; i <= 50; i++) {
            sum += i;
        }
        System.out.println("Sum of numbers from 1 to 50: " + sum);
    }
}

7) import java.util.Scanner;

public class Factorial {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number (N) to calculate its factorial: ");
        int n = scanner.nextInt();
        long factorial = 1;

        for (int i = 1; i <= n; i++) {
            factorial *= i;
        }

        System.out.println("Factorial of " + n + " is: " + factorial);
        scanner.close();
    }
}
```

8)

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```

```
public class TrianglePattern1 {
   public static void main(String[] args) {
      for (int i = 1; i <= 5; i++) {
         for (int j = 1; j <= i; j++) {
            System.out.print("*");
         }
         System.out.println();
      }
   }
}
```

9)

```
*****

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*
```

```
public class TrianglePattern2 {
   public static void main(String[] args) {
      for (int i = 5; i >= 1; i--) {
         for (int j = 1; j <= i; j++) {
```

```
            System.out.print("*");
        }
        System.out.println();
    }
  }
}
```