

# Exercises

Luxformel

## Java Basics: Calculation with numbers, comparing numbers, and Strings

### Exercise 1

Write a Java program to print 'Hello' on screen and then print your name on a separate line.

```
System.out.println("Hello");  
  
System.out.println("Lux Formel");
```

### Exercise 2

Write a Java program to print the sum of two numbers.

```
int a = 32;  
int b = 15;  
  
int result = a + b;  
  
System.out.println(a + " + " + b + " = " + result);
```

### Exercise 3

Write a Java program to divide two numbers and print the solution on screen.

```
int a = 391;  
int b = 3;  
  
// because the result maybe a floating point  
//number we need to use float or double  
  
float result = (float) a / b;
```

```
System.out.println(a + " / " + b + " = " + result);
```

#### Exercise 4

Write a Java program to print the result of the following operations.

1.  $-5 + 8 \cdot 6$
2.  $(55+9) \% 9$
3.  $20 + (-3) \cdot 5 : 8$
4.  $5 + 15 : 3 \cdot 2 - 8 \% 3$

```
System.out.println(-5 + 8 * 6);
System.out.println((55+9) % 9);
System.out.println(20 + -3 * 5 / 8);
System.out.println(5 + 15 / 3 * 2 - 8 % 3);
```

#### Exercise 5

Write a Java program that takes two numbers as input and display the product of two numbers.

```
int a = 5;
int b = 9;

int result = a * b;

System.out.println(result);
```

#### Exercise 6

Write a Java program to print the sum, multiply, subtract, divide and remainder of two numbers.

```
int a = 57;
int b = 99;

int sum = a + b;
int multiplication = a * b;
int subtraction = a - b;
double division = (double) a / b;
int mod = a % b;

System.out.println("sum: " + sum);
System.out.println("multiplication: " + multiplication);
```

```
System.out.println("subtraction: " + subtraction);
System.out.println("division: " + division);
System.out.println("mod: " + mod);
```

### Exercise 7

Write a Java program that takes a number as input and prints its multiplication table up to 10.

```
int inputNumber = 8;

for(int i = 0; i <= 10; i++){
    int result = inputNumber * i;
    System.out.println(inputNumber + " times " + i + " equals: " + result);
}
```

### Exercise 8

Write a Java program to print the area and perimeter of a circle.

```
int radius = 1;

double area = Math.PI * radius * radius;
double perimeter = 2 * Math.PI * radius;

System.out.println("The area is: " + area);
System.out.println("The perimeter is: " + perimeter);
```

### Exercise 9

Write a Java program to print the area and perimeter of a rectangle.

```
int width = 9;
int height = 4;

int area = width * height;
int perimeter = 2 * (width + height);

System.out.println("The area is: " + area);
System.out.println("The perimeter is: " + perimeter);
```

## Exercise 10

Write a Java program that takes three numbers as input to calculate and print the average of the numbers.

```
int number1 = 6;
int number2 = 9;
int number3 = 2;

//the average could be a floating point number, so we need float or double
double average = (number1 + number2 + number3) / (double) 3;

System.out.println("The average is: " + average);
```

## Exercise 11

Write a Java program to swap two variables.

```
int a = 128;
int b = 40;

//temporary variable needed for the swap
int temp;

//swap
temp = a;
a = b;
b = temp;
```

## Exercise 12

Write a Java program to compare two numbers.

```
int a = 5;
int b = 13;

//is a greater than b
if(a > b){
    System.out.println("a is greater than b");
}

//is a less than b
if(a < b){
```

```
    System.out.println("a is less than b");
}

//is a equal to b
if(a == b){
    System.out.println("a is equal to b");
}

//is a not equal to b
if(a != b){
    System.out.println("a is not equal to b");
}

//is a greater than or equal to b
if(a >= b){
    System.out.println("a is greater or equal to b");
}

//is a less than or equal to b
if(a <= b){
    System.out.println("a is less or equal to b");
}
```

### Exercise 13

Write a Java program to reverse a string.

```
String sentence = "The quick brown fox jumped over the lazy dog";

char[] charArray = sentence.toCharArray();

for (int i = charArray.length - 1; i >= 0; i--){
    System.out.print(charArray[i]);
}
```