**Ресурс w3resource (Java Basic Part I)**

1. Write a Java program to print 'Hello' on screen and then print your name on a separate line.   
Expected Output :  
Hello  
Alexandra Abramov

Solution:

public class Main {

public static void main(String[] args) {

System.out.println("Hello!");

System.out.println("Yuriy Savchuk");

}

}

2. Write a Java program to print the sum of two numbers.  
Test Data:  
74 + 36  
Expected Output :  
110

Solution:

public class Main {

public static void main(String[] args) {

int a = 74, b = 36;

System.out.println(a + b);

}

}

3. Write a Java program to divide two numbers and print on the screen   
Test Data :  
50/3  
Expected Output :  
16

Solution:

public class Main {

public static void main(String[] args) {

int a = 50, b = 3;

System.out.print(a / b);

}

}

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

Test Data:  
a. -5 + 8 \* 6  
b. (55+9) % 9  
c. 20 + -3\*5 / 8  
d. 5 + 15 / 3 \* 2 - 8 % 3  
Expected Output :  
43  
1  
19  
13

Solution:

public class Main {

public static void main(String[] args) {

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);

}

}

5. Write a Java program that takes two numbers as input and display the product of two numbers.   
Test Data:  
Input first number: 25  
Input second number: 5  
Expected Output :  
25 x 5 = 125

Solution:

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Input first number: ");

int a = scan.nextInt();

System.out.println("Input second number: ");

int b = scan.nextInt();

int pr = a \* b;

System.out.println(a + " \* " + b + " = " + pr);

}

}

6. Write a Java program to print the sum (addition), multiply, subtract, divide and remainder of two numbers.   
Test Data:  
Input first number: 125  
Input second number: 24  
Expected Output :  
125 + 24 = 149  
125 - 24 = 101  
125 x 24 = 3000  
125 / 24 = 5  
125 mod 24 = 5

Solution:

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Input first number: ");

int a = scan.nextInt();

System.out.println("Input second number: ");

int b = scan.nextInt();

int sum = a + b;

int sub = a - b;

int pr = a \* b;

int div = a / b;

int mod = a % b;

System.out.println(a + " + " + b + " = " + sum);

System.out.println(a + " - " + b + " = " + sub);

System.out.println(a + " \* " + b + " = " + pr);

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

System.out.println(a + " mod " + b + " = " + mod);

}

}

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

Test Data:  
Input a number: 8  
Expected Output :  
8 x 1 = 8  
8 x 2 = 16  
8 x 3 = 24  
...  
8 x 10 = 80

Solution:

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.print("Input a number: ");

int n = scan.nextInt();

int i, result;

for(i = 1; i<=10; i++) {

result = n \* i;

System.out.println(n + " \* " + i + " = " + result);

}

}

}

8. Write a Java program to display the following pattern.   
*Sample Pattern :*

J a v v a

J a a v v a a

J J aaaaa V V aaaaa

JJ a a V a a

Solution:

public class Main {

public static void main(String[] args) {

System.out.println(" J a v v a");

System.out.println(" J a a v v a a ");

System.out.println("J J aaaaa V V aaaaa ");

System.out.println(" JJ a a V a a");

}

}

9. Write a Java program to compute the specified expressions and print the output.  
Test Data:  
((25.5 \* 3.5 - 3.5 \* 3.5) / (40.5 - 4.5))  
Expected Output  
2.138888888888889

Solution:

public class Main {

public static void main(String[] args) {

double result = ((25.5 \* 3.5 - 3.5 \* 3.5) / (40.5 - 4.5));

System.out.println(result);

}

}

10. Write a Java program to compute a specified formula.   
Specified Formula :  
4.0 \* (1 - (1.0/3) + (1.0/5) - (1.0/7) + (1.0/9) - (1.0/11))  
Expected Output  
2.9760461760461765

Solution:

public class Main {

public static void main(String[] args) {

double result = 4.0 \* (1 - (1.0/3) + (1.0/5) - (1.0/7) + (1.0/9) - (1.0/11));

System.out.println(result);

}

}

11. Write a Java program to print the area and perimeter of a circle.   
Test Data:  
Radius = 7.5  
Expected Output  
Perimeter is = 47.12388980384689  
Area is = 176.71458676442586

Solution:

public class Main {

public static void main(String[] args) {

double radius = 7.5, pi = 3.141592653589793238462643;

double S = pi \* (radius \* radius);

double P = 2 \* pi \* radius;

System.out.println("Perimeter is = " + P);

System.out.println("Area is = " + S);

}

}

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

Solution:

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Input first number: ");

int a = scan.nextInt();

System.out.println("Input second number: ");

int b = scan.nextInt();

System.out.println("Input third number: ");

int c = scan.nextInt();

int aver = (a + b +c)/3;

System.out.println("Average = " + aver);

}

}

13. Write a Java program to print the area and perimeter of a rectangle.   
Test Data:  
Width = 5.5 Height = 8.5

Expected Output  
Area is 5.6 \* 8.5 = 47.60  
Perimeter is 2 \* (5.6 + 8.5) = 28.20

Solution:

public class Main {

public static void main(String[] args) {

double a = 5.5;

double b = 8.5;

Double S = a \* b;

Double P = 2 \* (a + b);

System.out.println("Area is = " + S);

System.out.println("Perimeter is = " + P);

}

}

14. Write a Java program to print an American flag on the screen.

*Expected Output*

\* \* \* \* \* \* ==================================

\* \* \* \* \* ==================================

\* \* \* \* \* \* ==================================

\* \* \* \* \* ==================================

\* \* \* \* \* \* ==================================

\* \* \* \* \* ==================================

\* \* \* \* \* \* ==================================

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Solution:

public class Main {

public static void main(String[] args) {

System.out.println("\* \* \* \* \* \* ==================================");

System.out.println(" \* \* \* \* \* ==================================");

System.out.println("\* \* \* \* \* \* ==================================");

System.out.println(" \* \* \* \* \* ==================================");

System.out.println("\* \* \* \* \* \* ==================================");

System.out.println(" \* \* \* \* \* ==================================");

System.out.println("\* \* \* \* \* \* ==================================");

System.out.println(" \* \* \* \* \* ==================================");

System.out.println("\* \* \* \* \* \* ==================================");

System.out.println("==============================================");

System.out.println("==============================================");

System.out.println("==============================================");

System.out.println("==============================================");

System.out.println("==============================================");

System.out.println("==============================================");

}

}

15. Write a Java program to swap two variables.

Solution:

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.println("Input first variable int: ");

int a = scan.nextInt();

System.out.println("Input second variable int: ");

int b = scan.nextInt();

System.out.println("Variables BEFOR swapping: " + a + " and " + b);

int c;

c = a;

a = b;

b = c;

System.out.println("Variables AFTER swapping: " + a + " and " + b);

}

}

16. Write a Java program to print a face.   
Expected Output

+"""""+

[| o o |]

| ^ |

| '-' |

+-----+

Solution:

public class Main {

public static void main(String[] args) {

System.out.println(" +\"\"\"\"\"+ ");

System.out.println("[| o o |]");

System.out.println(" | ^ | ");

System.out.println(" | '-' | ");

System.out.println(" +-----+");

}

}

17. Write a Java program to add two binary numbers.   
Input Data:  
Input first binary number: 10  
Input second binary number: 11  
Expected Output

Sum of two binary numbers: 101

Solution:

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Input first binary int: ");

int a = Integer.parseInt(sc.next(), 2);

System.out.println("Input second binary int: ");

int b = Integer.parseInt(sc.next(), 2);

System.out.println("Sum of two binary numbers:" + Integer.toBinaryString(a + b));

}

}