1. **//Create a program that declares and initializes all primitive data types in Java and prints their default and assigned values.**

```
class Default_Value
{
        public static void main(String args[])
        {
    // Declaring variables with default values
    byte b = 0;
    short s = 0;
    int i = 0;
    long l = 0L;
    float f = 0.0f;
    double d = 0.0;
    char c = '\u0000';  // Default: null character
    boolean B = false;

    System.out.println("Default values of Primitive Data Types ");
    // Printing default values
    System.out.println("byte: " + b);
    System.out.println("short: " + s);
    System.out.println("int: " + i);
    System.out.println("long: " + l);
    System.out.println("float: " + f);
    System.out.println("double: " + d);
    System.out.println("char: '" + c + "'");
    System.out.println("boolean: " + B);
            System.out.println(" ");


    System.out.println("Assigning values of Primitive Data Types ");

    // Assigning new values
    b = 45;
    s = 12;
    i = 8878;
    l = 548782L;
    f = 3.8f;
    d = 785.479821;
    c = 'H';
    B = true;

    // Printing assigned values
    System.out.println("Assigned Values:");
```

```
        System.out.println("byte: " + b);
        System.out.println("short: " + s);
        System.out.println("int: " + i);
        System.out.println("long: " + l);
        System.out.println("float: " + f);
        System.out.println("double: " + d);
        System.out.println("char: '" + c + "'");
        System.out.println("boolean: " + B);
           }
}
```

---

2. **Write a program to convert an int value to double automatically and display both values**

```
class Automatic_Conversion
{

public static void main(String args[])

        {

        int a=10845;

        System.out.println("The Int Value is : "+a);

        double d=a;

        System.out.println("After conversion the Value is : "+d);

        }

}
```

---

3. **//Write a program to convert a double value to int using typecasting and explain the data loss**

```
class Automatic_Conversion1
{
        public static void main(String args[])
        {
                double d=10845.857;
                System.out.println("The Int Value is : "+d);
                int a=(int)d;
                System.out.println("After conversion the Value is : "+a);
        }
}
```

---

4. **//Write a program to calculate the average of three int numbers using typecasting to display the result in double**.

```
class Avg_TypeCast
{
	public static void main(String args[])
	{
		int a=10, b=20, c=30;
		double d = (a+b+c)/3;
	System.out.println("Average of three int numbers using typecasting is : "+d);
	}
}
```

---

5. **//Write a program to demonstrate binary, octal, hexadecimal, and floating-point literals in Java**

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

		int a=0b1010;
		System.out.println("binary conversion of (0b1010) is : "+a);
		int b=0765;
		System.out.println("Octal conversion of (0765) is : "+b);
		int c=0x1010;
		System.out.println("hexadecimal conversion of (0x1010) is : "+c);
		float d=123.456f;
		System.out.println("floating point conversion of (123.456) is : "+d);
		double e=123.456;
		System.out.println("floating point conversion of (123.456) is : "+e);
		double f=1e4;
		System.out.println("floating point conversion of (1e4) is : "+f);
	}
}
```

---

6. **//Write a program to display character and string literals along with their ASCII values**

```
class Literal1
{
```

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

		char ch='a';
		char ch1='A';
		char ch3=' ';
		System.out.println("ASCII value of "+ch+" is: " +(int)ch);
		System.out.println("ASCII value of "+ch1+" is: " +(int)ch1);
		System.out.println("ASCII value of "+ch3+" is: " +(int)ch3);
		System.out.println("");


		String s1="Hii";
		System.out.println("String Literal: "+s1);
		for(int i=0;i<s1.length();i++)
		{
			char c=s1.charAt(i);
		System.out.println("The ASCII Values of "+c+" string is : "+(int)c);
		}
	}
}
```

---

7. **//Write a program that uses boolean literals to control program flow in an if-else statement.**

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

		boolean b=true;
		boolean c=false;
		if(true)
		{
		System.out.println("This block executed when statement is true "+b);

		}
		if(false)
		{
		System.out.println("This block executed when statement is false "+c);
		}
		else
		{
```

```
                System.out.println("This block executes instead of the false block");
                }
        }
}
```

---

8. **//Write a program to perform addition, subtraction, multiplication, division, and modulus operations on two integer numbers and display the results**

```
class Arithmetic
{
        public static void main(String args[])
        {
                int a=10;
                int b=2;

                System.out.println("The Addition of " + a + " and " + b + " is: "+(a+b));
                System.out.println("The Substraction of " + a + " and " + b + " is: "+(a-
b));
                System.out.println("The Multiplication of " + a + " and " + b + " is:
"+(a*b));
                System.out.println("The Division of " + a + " and " + b + " is: "+(a/b));
                System.out.println("The Modulus of " + a + " and " + b + " is: "+(a%b));
        }
}
```

---

9. **//Write a program to compare two integers using all relational operators (==, !=, >, <, >=, <=) and display the results**

```
class Relational
{
        public static void main(String args[])
        {
                int a=4;
                int b=2;

                System.out.println(a + " == " + b + " : " + (a == b));
                System.out.println(a + " != " + b + " : " + (a != b));
                System.out.println(a + " > " + b + " : " + (a > b));
                System.out.println(a + " < " + b + " : " + (a < b));
                System.out.println(a + " >= " + b + " : " + (a >= b));
                System.out.println(a + " <= " + b + " : " + (a <= b));
        }
}
```

4 == 2 : false

4 != 2 : true

4 > 2 : true

4 < 2 : false

4 >= 2 : true

4 <= 2 : false

---

10. //Write a program to demonstrate the use of assignment operators (=, +=, -=, *=, /=, %=) on two integers

```
class Assignment
{
	public static void main(String args[])
	{
		int a=10;
		int b=2;
		System.out.println("a= "+a+ " b= "+b);

		System.out.println(" ");
		System.out.println("a = b : " + (a = b));
		System.out.println("a += b : " + (a += b));
		System.out.println("a -= b : " + (a -= b));
		System.out.println("a *= b : " + (a *= b));
		System.out.println("a /= b : " + (a /= b));
		System.out.println("a %= b : " + (a %= b));
	}
}
```

---

11. //Write a program to check if a number is positive and even using logical operators (&&, ||, !)

```
import java.io.Scanner;
public class Q11{
	public static void main(String[] args){
		Scanner sc = new Scanner (System.in);
		int x =  sc.nextInt();

		if(x>0 && x%2==0){
```

```
                System.out.println(x + " is even and positive");
            }
        }
```