1. Type Conversion Challenge

Problem:

Write a Java program that accepts an integer, a float, and a character from the user.

Perform the following operations:

Convert the integer to a float and add it to the float input.

Convert the character to its ASCII value and add it to the integer.

Display the results with proper data type usage.

Program:

```
import java.util.*;
class Main {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int a=sc.nextInt();
        float b= sc.nextFloat();
        char c=sc.next().charAt(0);
        int d= (int)c+a;
        float e=((float)a)+b;
        System.out.println(d);
        System.out.println(e);
    }
}
```

0UTPUT:

```
5
2.5
A
70
7.5
```

2. Arithmetic Expression Evaluator

Problem:

Write a program that takes three numbers from the user: two integers and one double.

Perform and display the results of the following:

Addition, Subtraction, Multiplication, and Division between the integers.

Multiply the result of the addition with the double value.

Ensure proper type casting is used wherever necessary.

Program:

```
import java.util.*;
class Main {
   public static void main(String[] args) {
      Scanner sc=new Scanner(System.in);
      int a=sc.nextInt();
      int b=sc.nextInt();
      double c=sc.nextDouble();
      int d=a+b, e=a-b, f=a*b, g=a/b;
      System.out.println(d);
      System.out.println(e);
      System.out.println(f);
      System.out.println(g);
      double h=d*c;
      System.out.println(h);
   }
}
```

OUTPUT:

```
8
```

4

2.5

12

4

32

2

30.0

3. Bitwise Operator Experiment

Problem:

Create a program that reads two integer numbers from the user. Perform the following

bitwise operations and print the results:
AND

OR

XOR

Left Shift (both numbers by 2 bits)
Right Shift (both numbers by 2 bits)

Program:

```
import java.util.*;

class Main {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int a=sc.nextInt();
        int b=sc.nextInt();
        int c= a&b, d=a|b, e=a^b, f= a<<2, g=b<<2, h=a>>2, i=b>>2;
        System.out.println("AND: "+c);
```

```
        System.out.println("OR: "+d);
        System.out.println("XOR: "+e);
        System.out.println("a << 2: "+f);
        System.out.println("b << 2: "+g);
        System.out.println("a >> 2: "+h);
        System.out.println("b >> 2: "+i);
    }
}
```

OUTPUT:

```
10
5
AND: 0
OR: 15
XOR: 15
a << 2: 40
b << 2: 20
a >> 2: 2
b >> 2: 1
```