1. **Understanding code**

Draw a representation of what the computer's memory looks like at the end of each of these programs:

```java
public class Expressions-Declarations {
    public static void main(String [] args) {
        int x;
        double y;
        String s;
    }
}

public class Expressions-Assignment {
    public static void main(String [] args) {
        int x = 7;
        int y = 9;
        double z = x;
        x = 8;
        y = y + 3;
    }
}

public class Expressions-IntDiv {
    public static void main(String [] args) {
        int x = 3;
        double y = x / 4;
    }
}

public class Expressions-OrderOfOps {
    public static void main(String [] args) {
        int x = 1 + 2 * 3 - 4;
    }
}

public class Expressions-Modulus {
    public static void main(String [] args) {
        int x = 3;
        int y = 7 % x;
        int z = x % 2;
        y = y % 1;
        z = x % 0;
    }
}
```
public class Expressions-TypeConversions {
    public static void main(String[] args) {
        double x = 1.0;
        double y = 1;
        double z = y + 1;
        x = 1 / z;
        int a = (int) x;
        a = a + x;
    }
}

public class Expressions-StringConcatenations {
    public static void main(String[] args) {
        String s = "hello";
        String t = "115";
        s = s + 9.5;
        t = t + 10;
        t = t + "5";
    }
}

public class Expressions-WithTagln {
    public static void main(String[] args) {
        String s = "hello";
        String t = "115";
        int a = 7 / 3;
        double d = 6.0 / a;
        System.out.println(s + " again " + a);
        System.out.println(d + a);
        System.out.println("what is a? " + a);
    }
}

import java.util.Scanner;
public class Expressions-Scanner {
    public static void main(String[] args) {
        Scanner kb = new Scanner(System.in);
        int x = kb.nextInt();
        double y = kb.nextDouble();
        String s = kb.next();
        System.out.println(s + y + z);
    }
}

2. Writing Java Programs with Expressions
Write statements to put inside the main method that answer each of the following questions.

a. Create an int variable to store the number 7. Create a double to the same value as the int, converted to a double.

b. Create a Scanner variable to read numbers from the keyboard. Read an int from the keyboard, and store it in a variable. Read a String from the keyboard, and store it in a variable. Print both variables to the screen.

c. Read in two ints from the keyboard, and print the sum to the screen.