Question 3

Create a base class box with height, depth and width. Add a method to calculate volume. Write all possible constructors. Create a derived class with additional data members weight and colour. Make usage of the keyword super.

```java
import java.util.*;

class Box {
    double width, height, depth;

    Box(double wid, double hei, double dep) {
        this.width = wid;
        this.height = hei;
        this.depth = dep;
    }

    public void volume() {
        System.out.println("The volume = " + (width * height * depth));
    }
}

class Shape extends Box{
    String color;
    double weight;

    Shape(double wid, double hei, double dep, double wei, String col) {
        super(wid, hei, dep);
        this.color = col;
        this.weight = wei;
    }

    public void showInfo() {
        System.out.println("Weight = " + weight);
        System.out.println("Color = " + color);
        volume();
    }
}
```

```
    }

public class ShapeOperations {
    public static void main(String args[]) {
        double h, w, wei, d;
        String colour;
        Scanner ob = new Scanner(System.in);

        Shape S;
        /*if nextDouble() doesn't work, use nextInt() */
        System.out.print("Enter the height: ");
        h = ob.nextDouble();
        System.out.print("Enter the width: ");
        w = ob.nextDouble();
        System.out.print("Enter the depth: ");
        d = ob.nextDouble();
        System.out.print("Enter the weight of the shape: ");
        wei = ob.nextDouble();
        System.out.print("Enter the color of the shape: ");
        colour = ob.next();
        S = new Shape(w, h, d, wei, colour);

        S.showInfo();

        ob.close();
    }
}
```

Output:

```
Enter the height: 45
Enter the width: 23
Enter the depth: 25
Enter the weight of the shape: 88
Enter the color of the shape: Red
Weight = 88.0
Color = Red
The volume = 25875.0
```