

L02

SodaCan.java

```
/**
 * Constructor and methods for a soda can object
 *
 * @author Brandon
 * @version 1/1/1990
 */
public class SodaCan {
    private double r; // soda can radius
    private double h; // soda can height

    public SodaCan(double radius, double height) {
        r = radius;
        h = height;
    }

    public double findSurfaceArea() {
        return 2.0 * (22.0 / 7.0) * r * h + 2.0 * (22.0 / 7.0) * r * r; // compute the surface area  $A=2\pi rh+2\pi r^2$ 
    }

    public double findVolume() {
        return (22.0 / 7.0) * r * r * h; // compute the volume  $V=\pi r^2 h$ 
    }
}
```

SodaCanTest.java

```
import java.util.Scanner;

/**
 * A class to test a SodaCan
 *
```

```
* @author Brandon
* @version 1/1/1990
*/
public class SodaCanTest {
    public static void main(String[] args) {
        Scanner myScanner = new Scanner(System.in);

        System.out.print("Enter the radius: ");
        String answer = myScanner.nextLine();
        double radius = Double.parseDouble(answer); // convert using the parseDouble method

        System.out.print("Enter the height: ");
        answer = myScanner.nextLine();
        double height = Double.parseDouble(answer); // convert using the parseDouble method

        // instantiate a soda can object using the radius and height above
        // display the surface area to three decimal digits using printf
        // display the volume to three decimal digits using printf
        SodaCan mySodaCan = new SodaCan(radius, height);

        System.out.printf("The surface area of the can is %.3f", mySodaCan.findSurfaceArea());
        System.out.println(); // this is to add a new line between the strings
        System.out.printf("The volume of the can is %.3f", mySodaCan.findVolume());
    }
}
```

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