CIRCLE OBJECTS

Objectives: Objects, Methods, Member Variables

Task: Calculate a circle's circumference and area.

What will the application do?

- The application prompts the user to enter a radius; the user may enter a decimal number.
- The application displays an error if the user enters invalid data and asks the user again for a radius.
- When the user enters valid data, the application calculates the area and circumference of the circle and rounds to the nearest 2 decimal places and prints out both.
- The application asks the user whether they want to do another.
- The application displays a "goodbye" message that also indicates the number of circles the user built when the user chooses not to continue.

Build Specifications:

1. Create a class named **Circle** to store the data about this circle. This class should contain these constructors and methods:
    a. `public Circle(double radius)`
    b. `public double CalculateCircumference()`
    c. `public string CalculateFormattedCircumference()`
    d. `public double CalculateArea()`
    e. `public string CalculateFormattedArea()`
    f. `private string FormatNumber(double x)`
    g. Define a member called radius. This member should be private.
    h. Define a property to get access to the class member: Radius
2. For the value of pi, use the PI constant of the System.Math class.
3. In the Main method, get the user input, create a Circle object, and display the circumference and area.

Hints:

- Don't mess up the formulas for circumference or area of a circle!

Extra Challenges:

- Create a class named Validator and use its static methods to validate the data in this application.

Console Preview:

```
Welcome to the Circle Tester
Enter radius: 3
Circumference: 18.85
Area:          28.27
Continue? (y/n): n
Goodbye. You created 2 Circle object(s).
```