Lab – Java Methods Chapter 3, Exercise 12

12. The class `Circle` (`Circle.java` in `JM\Ch03\Exercises`) describes a circle with a given radius. The radius has the type double, which is a primitive data type used for representing real numbers. The `CircleTest.java` class in `JM\Ch03\Exercises` is a tiny console application that prompts the user to enter a number for the radius, creates a `Circle` object of that radius, and displays its area by calling the `Circle`'s `getArea` method.

Create a class `Cylinder` with two private fields: `Circle base` and `double height`. Is it fair to say that a `Cylinder` HAS-A `Circle`? Provide a constructor that takes two double parameters, `r` and `h`, initializes base to a new `Circle` with radius `r`, and initializes height to `h`. Provide a method `getVolume` that returns the volume of the cylinder (which is equal to the base area multiplied by height). Create a simple test program `CylinderTest` that prompts the user to enter the radius and height of a cylinder, creates a new cylinder with these dimensions, and displays its volume. A sample of the test program's prompt and output is shown below:

```
Enter the radius and the height: 2.0 10.0
radius = 2.0 height = 10.0 volume = 125.66370614359172
```