```java
1   /**
2    * Sphere is a child of AbstractShape, Shape, and ThreeDShape.
3    *
4    * @author (Dennis Pavlyuk & Kurt Mueller)
5    * @version (9/12/19)
6    */
7   public class Sphere extends AbstractShape
8   {
9       private double radius;
10      protected static int numSpheresCreated = 0;
11
12      public Sphere(double rad) //constructor
13      {
14          radius = rad;
15          incrementNumSpheresCreated();
16          incrementNumShapesCreated();
17      }
18
19      public double area()
20      {
21          double area = 4.0 * Math.PI * radius * radius;
22          return area;
23      }
24
25      public double perimeter()
26      {
27          return 0.0;
28      }
29
30      public double volume()
31      {
32          double volume = (4.0 * Math.PI * radius * radius * radius) / 3.0;
33          return volume;
34      }
35
36      public void incrementNumSpheresCreated()
37      {
38          numSpheresCreated++;
39      }
40
41      public void incrementNumShapesCreated()
42      {
43          numShapesCreated++;
44      }
45  }
```