1. Define a class that represents a dog. This class should have three attributes and two methods:
   1. Attributes:
      1. One for age
      2. One for dog type
      3. One for whether or not it “has been walked”
   2. A constructor that sets the attributes mentioned in (a) and (b), but sets the attribute mentioned in (c) to false.
      1. A method named walked() that, when run, sets the “has been walked” variable to true.
   3. A method that, when run, prints whether or not the dog has been walked.
   4. **Test your code** by creating an instance of the class and calling the walked() method.
2. Define a class that represents a shape. This class should have two attributes, a method, and a constructor:
   1. Attributes:
      1. One to store the x position of the shape on the screen.
      2. One to store the y position of the shape on the screen.
   2. A method that allows the user to change the attributes mentioned in (a) and (b)
   3. A constructor that sets the values of the attributes mentioned in (a) and (b) when an object instance is created from this class.
   4. **Test your code** by creating an instance of the class and calling the methods that change the values of the attributes. Print the values of your attributes as the last part of the test.
3. Define a class that represents a circle. It must be a subclass of the class created in (2). It must have two attributes, one method, and a constructor:
   1. Attributes
      1. One for radius
      2. One for area
   2. A method that finds the area of the circle using the radius (Use the formula and make equal to 3.14)
   3. A constructor that sets the attributes mentioned in (a)
   4. **Test your code** by creating an instance of the class and calling the walked() method.
4. Software developers often use UML diagrams to describe their ideas during the early stages of software development. Suppose you and your partner are working on a word processing program.
   1. Describe what you would want the user to be able to do with the word processing software.
   2. Circle all nouns in your description.
   3. For each noun that you think would make sense as a class, make up a class name and title a UML class diagram with it.
   4. In your UML class diagram, record attributes and methods that would make sense with objects in these classes.