Stock class

The following program implements a Stock class and a short test program for it. Read through the code and then answer the questions on the next page.

Stock.java

```java
class Stock {
    private String symbol;
    private String name;
    private double previousClosingPrice;
    private double currentPrice;

    public Stock() {
    }

    public Stock(String newSymbol, String newName) {
        symbol = newSymbol;
        name = newName;
    }

    public double getChangePercent() {
        return (currentPrice - previousClosingPrice) / previousClosingPrice;
    }

    public double getPreviousClosingPrice() {
        return previousClosingPrice;
    }

    public double getCurrentPrice() {
        return currentPrice;
    }

    public void setCurrentPrice(double newCurrentPrice) {
        currentPrice = newCurrentPrice;
    }

    public void setPreviousClosingPrice(
        double newPreviousClosingPrice) {
        previousClosingPrice = newPreviousClosingPrice;
    }
}
```

TestStock.java

```java
public class TestStock{
    public static void main(String[] args) {
        Stock stock = new Stock(
            "SUNW", "Sun MicroSystems Inc.");
        stock.setPreviousClosingPrice(100);

        // Set current price
        stock.setCurrentPrice(90);

        // Display stock info
        System.out.println("Previous Closing Price: " + stock.getPreviousClosingPrice());
        System.out.println("Current Price: " + stock.getCurrentPrice());
        System.out.println("Price Change: " + stock.getChangePercent() * 100 + ";");
    }
}
```
Questions:

1. How do the two files work together as a single program? Which method of which class is called first?

2. Name all of the data fields in the Stock class? What do they represent? What does the private specifier imply?

3. In how many ways can a Stock object be constructed? Which are the methods that are used for constructing Stock objects?

4. What are the methods get... used for? What is the name of such methods in general?

5. What are the methods set... used for? What is the name of such methods in general?

6. What is the purpose of the TestStock class?

7. Are the tests in the TestStock class sufficient to tell that the Stock class is implemented correctly? If no, come up with a few statements that would "break" the program.

8. What changes should be made to both classes to make the program better:
   - for the Stock class, we want to make it resilient to errors that can be cause by misuse of the code by the client code;
   - for the TestStock class, we want to make sure that it really tries to break the code of the Stock class and that it test if the class behaves correctly.