Question 1: Circle class

Define a class Circle. We want to be able to calculate the area of a circle and find the circumference of a circle.

Area: πr^2

Circumference: $2\pi r$

What methods should the class have?
What instance variables does it need?

1. Draw a simple UML class diagram for your class.

2. Implement the Circle class.

3. Write a program to test your class.

Question 2: Currency Converter class

1. Design a class for a simple *currency converter*. The class should have a method to set and get the exchange rate. The class should also have methods to convert a Euro amount to a Sterling amount, and to convert a Sterling amount to a Euro amount.

2. Draw a simple UML class diagram for your class.

3. Implement the Converter class.

4. Write a simple program to test your class.

5. Using the Converter class, write a program that will allow the user to perform a number of currency conversions. The user should be asked to enter today's exchange rate. The user should be able to do any number of conversions from Euro to Sterling and from Sterling to Euro. Use a menu to allow the user to select Euro to Sterling or Sterling to Euro or quit. The amount of money entered should then be converted to target currency and displayed appropriately.

Today's exchange rate is 1 Euro = 0.77 Stg