Describe, in as much detail as possible, one course policy that you have not seen in a previous course. If you did not see anything unique, describe the attendance policies for both lecture and lab in as much detail as possible.

Your grade will be based on the clarity and completeness of your answer.

(a) Write code that initializes the variable `number` as an `int` with the value 13.

(b) What will be stored in the variable `x`:

```java
double x = 3/6;
```

(c) Explain why the following code produces a compiler error:

```java
int i = 3.14;
```

(d) Define a **character literal** and provide an example of one.

(e) Rewrite the following code replacing the integer literal with a named constant. (You only need to rewite the lines that change.)

```java
System.out.print("Enter the number of hours until you plan to eat next: "):
Scanner in = new Scanner(System.in);
int hours = in.nextInt();
int minutes = hours * 60;
System.out.println("You plan to eat in approximately " + minutes + " minutes");
```

(a) Given a non-empty string with an even number of characters, complete the following code so that it returns the first half of the string.

```java
String firstHalf(String str) {




















}
```

(b) Write what the following code will display:

```java
public static void main(String[] args) {
    int i = 3;
    int j = 6;
    double x = 3.1;
    System.out.println(i + j);
    if (i<=2) {
        System.out.println("one");
    } else {
        System.out.println("two");
    }

    if (i<j) {
        System.out.println("three");
    } else if (i<x) {
        System.out.println("four");
    }
}
```

(a) Complete the code to calculate the value of x based on the following equation:

$$x = 2 \times \sin(2 \times a)$$

```
{
    System.out.println("Enter an angle in DEGREES");
    Scanner in = new Scanner(System.in);
    double a = in.nextDouble();

    double x =




}
```

(b) Complete the code to calculate the value of x based on the following equation:

$$x = \frac{-b - \sqrt{|b^2 - 4ac|}}{2a}$$

```
{
    Scanner in = new Scanner(System.in);
    double a = in.nextDouble();
    double b = in.nextDouble();
    double c = in.nextDouble();

    double x =




}
```
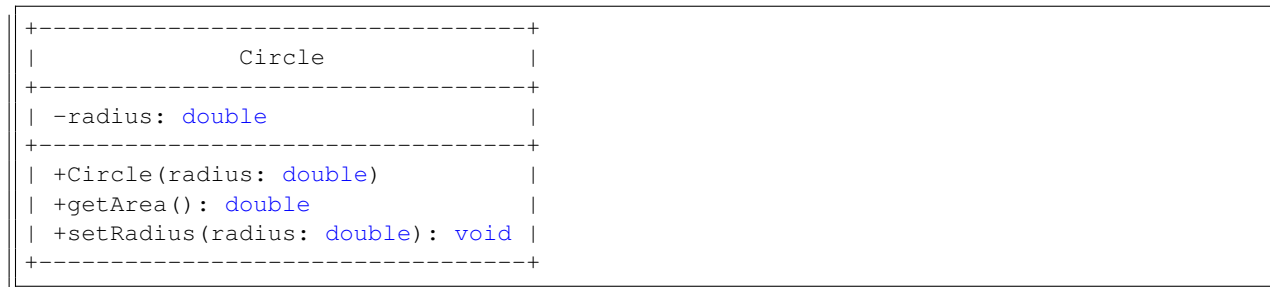
(a) Explain the difference between a local variable and an instance variable.

(b) Implement the class described in the following UML class diagram. Recall:

$$A = \pi r^2$$

```
+----------------------------------+
|             Circle               |
+----------------------------------+
| -radius: double                  |
+----------------------------------+
| +Circle(radius: double)          |
| +getArea(): double               |
| +setRadius(radius: double): void |
+----------------------------------+
```

Make use of the `Die` class from Lab 7 complete the following method:

```
/**
 * Returns the sum of rolling a die with numSides, timesRolled times
 *
 * For example, if numSides==6 and timesRolled==2, the method should
 * return 8 if the first roll was a 6 and the second roll was a 2.
 * @param numSides Number of sides for the die being rolled
 * @param timesRolled The number of times the die is rolled
 * @return total of all the rolls
 */
private static int rollDice(int numSides, int timesRolled) {
```

```
}
```

(a) List the three design methodologies discussed in chapter 8 of the textbook.

(b) Which design methodology is most likely to make use of **stub** methods?

(c) Given an array of `int`s, return `true` if the sum of all the `2`s in the array is exactly `8`.

```
public static boolean sumOfTwosIsEight(int[] nums) {
```

```
}
```

Write a class method, `raiseToPowerInPlace()` that accepts an `ArrayList` of `Double`s (called `bases`) and a `double` (called `exponent`) and returns nothing. The method must change the values stored in `bases` such that they are raised to the `exponent` power.