Exam #2 Review Questions
CSE110 - Arizona State University

1. Which of the following enforces encapsulation?
   a. Make instance variables `private`
   b. Make methods `public`
   c. Make the class `final`
   d. Both a and b
   e. All of the above
2. Use the following class to answer the questions below:

```
public class Store {
     private int quantity;
     private double price;
     public Store (int q, double p) {
          quantity = q;
          price = p;
     }
     public int getQuantity() {
          return quantity;
     }
     public void setPrice(double p) {
          price = p;
     }
     public double calcTotal() {
          return price * quantity;
     }
}
```

   a. What is the name of the class?
   b. List all instance variables of the class.
   c. List all methods of the class.
   d. List all mutators in the class.
   e. List all accessors in the class.
   f. List which method is the constructor
   g. Write the mutator for the quantity.
   h. Write the accessor for the price.
   i. Write the line of code that will create a new instance called videoStore that has 100 quantity and a price of 5.99.
   j. Call the calcTotal method with the videoStore object in part i to print out the total.
3. True or false? If no constructor is provided then Java automatically provides a default constructor.
4. True or false? A method must have at least one return statement.

5. Correct the following class definition if you think it will not work:

```
public class Student {
     private String name;
     private String major;
     public Student() {
          name = "???";
          major = "xxx";
     }
     public Student(String n, String m) {
          n = name;
          m = major;
     }
     public String getMajor() {
          return m;
     }
     public String getName() {
          return n;
     }
}
```

6. What will be the output of the following loops? Indicate the number of times the output will be displayed if it is too many to list.

   a.
   ```
   int n = 979;
   for (int j = 0; j <= n; j++ ) {
        System.out.print("Hello ");
   }
   ```

   b.
   ```
   int n = 5;
   for (int j = 1; j <= n; j+=3) {
        System.out.print( "Hello " );
        int k=j;
        while (k < n) {
             System.out.println(?Good Morning?);
             k++;
        }
        j--;
   }
   ```

   c.
   ```
   int j = 1;
   int n = 5;
   while (j <= n) {
        System.out.print("Hello ");
        n--;
   }
   ```

   d.
   ```
   int j = 1;
   while(j <= 11) {
        System.out.print("Hello ");
        j = j + 3;
   }
   ```

   e. What is the output of the following?

   ```
   String name;
   int i;
   boolean startWord;
   ```

```
name = "Richard M. Nixon";
startWord = true;
for (i = 0; i < name.length(); i++) {
     if (startWord)
          System.out.println(name.charAt(i));
     if (name.charAt(i) == ' ')
          startWord = true;
     else
          startWord = false;
}
```

f. What is the value of n?

```
int n = 1, i = 1;
while (i < 7) {
     n = n * i;
     i += 2;
}
System.out.print(n);
```

7. Write a boolean method called allDifferent that takes three int numbers and returns true if the numbers are all different and false otherwise.

8. Write a loop that read in int values until the user enters 0 and prints out how many values entered are greater than 10.

9. Write a loop that will print out every other letter in a String str. For example if the String was "Hello There" then "HloTee" would be printed.

10. Implement a class named AsuStudent. The class should keep track of the student's name, number of classes registered, hours spent per week for a class (Consider a student devotes the same amount of time for each of his class in a week). Implement a toString method to show the name and number of classes registered by a student, a getName method to return the name of the student, a getTotalhours method to return the total number of hours spent by a student in a week, and a setHours method to set the number of hours the student devotes for each class.