Exam #1 Review Questions
CSE110 - Arizona State University

1. What does a compiler do?
   a. Translates machine instructions to higher level languages
   b. Translates programs written in a high level language into machine code.
   c. Translates user programs to Java Programs
   d. None of the above

2. Consider the following Java program. By what name would you save this program on your hard disk?

```
public class VendingMachine {
     public static void main(String[] args) {
          System.out.println("Please insert 25c");
     }
}
```

3. Give the output of the following program:

```
public class MethodExample {
     public static void main(String[] args) {
          int y = 2, z = 1;
          z = y * 2;
          System.out.print(y + z);
     }
}
```

4. Give the output of the following program:

```
public class Exam1 {
     public static void main(String[] args) {
          String str = new String("Arizona state university");
          char ch1 = str.toLowerCase().toUpperCase().charAt(0);
          char ch2 = str.toUpperCase().charAt(8);
          char ch3 = str.toUpperCase().charAt(str.length()-1);
          System.out.println("character 1 is:" + ch1);
          System.out.println("character 2 is:" + ch2);
          System.out.println("character 3 is:" + ch3);
     }
}
```

5. Give the output of the following program:

```
public class Exam1_1 {
     public static void main(String[] args) {
          int num1 = 4,num2 = 5;
          System.out.println("4"+"5");
          System.out.println(num1 + num2);
```

```
            System.out.println("num1" + "num2");
            System.out.println(4+5);
        }
}
```

6. Which of the following invokes the method length() of the object str and stores the result in val?

   a. `int val = str.length();`

   b. `int val = length.str();`

   c. `int val = length().str;`

   d. `int val = length(str);`

7. Evaluate each of the following expressions, given:

```
String s = "Programming is Fun"; String t = "Workshop is cool";
```

   a. `System.out.println(s.charAt(0) + t.substring(3,4));`

   b. `System.out.println(t.substring(7));`

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.