Exam Set 13E Solutions
AP Computer Science A

Name _____Period_____

1. Refer to the code below to answer the following

```
String s = "Get here Thanksgiving!";
String m = "er";
int j = 8, z = 99;
```

| | |
|---|---|
| (a)<br>int k = s.indexOf(m);<br>System.out.println(k); | **5** |
| (b)<br>int k = s.indexOf('T');<br>System.out.println(k); | **9** |
| (c)<br>char p = s.charAt(6);<br>System.out.println(p); | **r** |
| (d)<br>int k = s.indexOf(z);<br>System.out.println(k); | **-1** |
| (e)<br>int k = s.indexOf('g', j);<br>System.out.println(k); | **15** |
| (f)<br>char p = s.charAt(z – 90);<br>System.out.println(p); | **T** |
| (g)<br>int k = s.indexOf(m, 15);<br>System.out.println(k); | **-1** |
| (h)<br>int k = s.indexOf(z + 2, 4);<br>System.out.println(k); | **5** |
| (i)<br>boolean k = s.contains(m);<br>System.out.println(k); | **true** |
| (j)<br>String s2 = "  JAVA  ";<br>String k = "!" + s2.trim() + "!"<br>System.out.println(k); | **!JAVA!** |
| (k)<br>System.out.println(m.compareTo(s)); | **30** |
| | /11 |

2. The Alphabetize class below, alphabetizes three words. Consider the following examples. Write the Alphabetize class.

| **Values of Strings s1, s2, and s3 before** | **Values of s1, s2, and s3 after** |
|---|---|
| String s1 = “cat”;<br>String s2 = “car”;<br>String s3 = “dog”; | String s1 = “car”;<br>String s2 = “cat”;<br>String s3 = “dog”; |
| String s1 = “dog”;<br>String s2 = “cat”;<br>String s3 = “car”; | String s1 = “car”;<br>String s2 = “cat”;<br>String s3 = “dog”; |

```
public class Alphabetize{

     public static void main(String args[]){


     //check if s1 is last
     if(s1.compareTo(s2)>0 && s1.compareTo(s3)>0){
          temp = s3;
          s3 = s1;
          s1 = temp;
     }
     //check if s2 is last
     if(s2.compareTo(s1)>0 && s2.compareTo(s3)>0){
          temp = s3;
          s3 = s2;
          s2 = temp;
     }
     //compare s1 and s2
     if(s1.compareTo(s2)>0){
          temp = s2;
          s2 = s1;
          s1 = temp;
     }
     System.out.println(s1 + " " + s2 + " " + s3);









     }

}
```

Score _____/21

3. Write an algorithm that could be used to count the number of times a string occurs in another string. Consider the examples below[1]. This algorithm requires that you incorporate a loop along with the substring() and length() methods.

| String to search | String to find | Occurrences |
|---|---|---|
| BAAB | AA | 1 |
| AAAAA | AA | 2 |
| AABABABAA | ABA | 2 |
| ABBAABB | ABA | 0 |

```
public class FindOccur{

     public static void main(String args[]){
```

**Solution 1**

```
     int count = 0;
     int i = 0;
     int len = smallStr.length();

     while (i < largeStr.length() - len + 1)
     {
        if (smallStr.equals(largeStr.substring(i,
           i + len)))
        {
           count++;
           i += len;
        }
        else
        {
           i++;
        }
     }
```

**Solution 2**

```
     int count = 0;
     String word = largeStr;
     int len = smallStr.length();
     int ind = word.indexOf(smallStr);

     while (ind != -1)
     {
        count++;
        word = word.substring(ind + len);
        ind = word.indexOf(smallStr);
     }


     }

}
```

[1] Adapted from the 2020 AP Computer Science A Exam

Score _____/21

4. The *removeSub* class below removes string from another string and composes the result. If the substring is not found the original string is returned. Consider the examples below,

| String to search | Substring to remove | Result |
|---|---|---|
| ABAAAAABAAAAABA | ABA | AAAAAA |
| ABAAAAABAAAAABA | ABAA | AAAAABA |
| ABAAAAABAAAAABA | AABAA | ABAAAAAABA |
| ABAAAAABAAAAABA | ACA | ABAAAAABAAAAABA |

You must use the scanner methods *setDelimiter()* and *hasNext()* in your solution.

```
public class removeSub{

     public static void main(String args[]){

     Scanner sc = new Scanner("ABAAAAABAAAAABA");
     String delimiter = /*some substring to be removed*/

     String result = "";
     sc.useDelimiter(delimiter);
     while(sc.hasNext()){
         result += sc.next();
     }









     }

}
```

/3

Score _____/21

Score _____/21