1. What gets printed? Please show output as it will appear or indicate “NO OUTPUT”. If it’s an infinite loop, be sure to show at least 3 lines of output followed by “INFINITE LOOP.”

```
int a = 4;
while (a>0)
{   
    System.out.println(a);
    a--;
}
```

Output:

```
int a = 4;
while (a>0)
{   
    a = a + 2;
    System.out.println(a);
}
```

Output:

```
int a = 0;
while (a <= 6)
{   
    if ((a%2)==0)
        System.out.println(a);
    a++;
}
```

Output:

```
int a = 1;
while (a < 4)
{   
    System.out.println(3*a);
    a++;
}
```

Output:
2. Let’s look at the problem of repeatedly obtaining input and performing a calculation, for example, computing the area of a circle given its radius, using the following algorithm:

Rewrite this algorithm, modifying it so that it uses a while structure to repeat the processing of each input in two different ways.

<table>
<thead>
<tr>
<th>Variables:</th>
<th>radius, area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm:</td>
<td>input radius&lt;br&gt;area = radius<em>radius</em> PI&lt;br&gt;print area</td>
</tr>
</tbody>
</table>

a) Compute the areas of 5 circles (exact count).

<table>
<thead>
<tr>
<th>Variables:</th>
<th>radius, area, count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm:</td>
<td>count= 1&lt;br&gt;while (count &lt;= 5)&lt;br&gt;input radius&lt;br&gt;area = radius * radius* PI&lt;br&gt;print area&lt;br&gt;count = count + 1</td>
</tr>
</tbody>
</table>

b) Keep computing circle areas until user inputs -1 for the radius (sentinel value)

<table>
<thead>
<tr>
<th>Variables:</th>
<th>radius, area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm:</td>
<td>input radius&lt;br&gt;while (radius != -1)&lt;br&gt;area= radius * radius* PI&lt;br&gt;print area&lt;br&gt;input radius</td>
</tr>
</tbody>
</table>
Quiz 4 9/20/16  Name:___________________________ ___/20

1. What gets printed? Please show output as it will appear or indicate “NO OUTPUT”. If it’s an infinite loop, be sure to show at least 3 lines of output followed by “INFINITE LOOP.”

```java
int a = 4;
while (a>0)
{
    System.out.println(a);
    a = a - 2;
}
```

Output: 4 2

```java
int a = 0;
while (a<0)
{
    a--;
    System.out.println(a);
}
```

Output: NO OUTPUT

```java
int a = 1;
while (a < 7)
{
    if ((a%2)==0)
        System.out.println(a);
    a++;  
}
```

Output: 2 4 6

```java
int a = 1;
while (a <= 20)
{
    System.out.println(a);
    a += 5;
}
```

Output: 1 6 11 16
2. Let's look at the problem of repeatedly obtaining input and performing a calculation, for example, computing the circumference of a circle given its radius, using the following algorithm:

```plaintext
Variables:
  radius, circ

Algorithm:
  input radius
  circ = 2 * radius* PI
  print circ
```

Rewrite this algorithm, modifying it so that it uses a while structure to repeat the processing of each input in two different ways.

a) Keep computing circumferences and ask each time whether to keep going.

Variables:
  radius, circ, ans

Algorithm:

```plaintext
ans = 1
while (ans equals 1)
  input radius
  circ = 2 * radius* PI
  print circ
  print “do another?”
  input ans
```

b) Compute the circumferences of 10 circles (exact count).

Variables:
  radius, circ, count

Algorithm:

```plaintext
count = 1
while (count <= 10)
  input radius
  circ = 2 * radius* PI
  print circ
  count = count + 1
```