1. What gets printed? Please show output as it will appear or indicate “NO OUTPUT” or show some of the output followed by “INFINITE LOOP.”

```
int a = 4;
while (a < 8)
{
   a++;
   System.out.println(a);
}
```

Output:

```
int a = 4;
while (a < 8)
{
   System.out.println(a);
   a--;
}
```

Output:

```
int a = 4;
while (a <= 5)
{
   System.out.println(2*a);
   a++;
}
```

Output:

```
int a = 4;
while (a < 14)
{
   System.out.println (a);
   a = a + 3;
}
```

Output:
1. What gets printed? Please show output as it will appear or indicate "NO OUTPUT" or show some of the output followed by "INFINITE LOOP."

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

Output:

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

Output:

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

Output:

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

Output:
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:

<table>
<thead>
<tr>
<th>Variables:</th>
</tr>
</thead>
<tbody>
<tr>
<td>radius, circ</td>
</tr>
</tbody>
</table>

**Algorithm:**
1. input radius
2. circ = 2 * radius * PI
3. 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.

<table>
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**Algorithm:**

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

<table>
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<tbody>
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<td>radius, circ</td>
</tr>
</tbody>
</table>

**Algorithm:**
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:

Variables:
  radius, area

Algorithm:
  input radius
  area = radius * radius * PI
  print area

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

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

Algorithm:

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

Algorithm: