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 = 5;
while (a>0)
{
    System.out.println(a);
    a = a - 2;
}
```

**Output:**

```
5
3
1
```

```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:

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

Variables:
- radius, circ

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

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

Variables:
- radius, circ, ans

Algorithm:
- 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:
- count = 1
- while (count <= 10)
  - input radius
  - circ = 2 * radius* PI
  - print circ
  - count = count + 1
Quiz 3 2/9/17  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 = 3;
while (a>=0)
{
    System.out.println(a);
    a--;
}
```

Output:
```
3
2
1
0
```

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

Output:
```
6
8
10...
```

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

Output:
```
0
2
4
6
```

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

Output:
```
3
6
9
```

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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:**
- radius, area, count

**Algorithm:**
- count = 1
- while (count <= 5)
  - input radius
  - area = radius * radius * PI
  - print area
  - count = count + 1

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

**Variables:**
- radius, area

**Algorithm:**
- input radius
- while (radius != -1)
  - area = radius * radius * PI
  - print area
  - input radius