1.
The purpose of a loop structure is to repeat a set of code until a certain condition is met. (Ex. Until true, until false, a certain number of times etc.)

2.
A while statement will have a condition that has to be met before it runs the program in its loop, on the other hand, the do-while loop runs the code at least once before evaluating if the condition to run is met.

3.
Guessing Game

4.
a)
An infinite loop in Java is a loop that would repeat itself infinitely unless the system crashes.

b)
This infinite loop can happen if the condition for a while statement is always true no matter what, It can also happen if the variable in the loop never changes, making it constantly run the same variable.

c)
Overflow is what we assign a value that exceeds the range of the declared data type of the variable. (Ex. an int value of 2, 909, 9090, 909 is an overflow and you would declare it as such.

5.
The loop will execute 60 times (120/2 = 60 because you add 2)

6.
Any value less than 123 because x is decreasing meaning it will always be less than 120. It needs to be 122 or less because 122 - 3 = 119 which satisfies the loop still and will continue to decrease be 3 which continually satisfies the loop.

7.
Counters
1.
Counters are especially useful in for and while loops when you want to count the number of iterations, for example in a this for loop the counter i will keep count of the number of iterations/become a value holder in the loop for (int i = 0; i < 10; i++).

2.
You can use counters to keep track of values in your loop such as the number of times a number is picked.

Accumulators

1.

You can use accumulators to sum up values such as summing all the numbers that are found in a for statement. You can also use accumulators to do multiplication in the same way.

2.

Accumulators can also be used to add up strings to make sentences or display information by combining words.

8.

```
import java.util.Scanner;
public class test {
        public static void main(String[] args) {
                int sum = 0; for
                (int i = 3; i <= 10; i++) { sum += i; }
                System.out.println("The sum of integers from 3 to 10 is: " + sum);
                }
}
```

9.

1. Use a for loop when you know how many times the loop will run or have a fixed range (Ex. calculating the sum of numbers between 1 and 20), on the other hand use a while loop when you're getting a user input or the number of iterations depends on a condition (Ex. loop keeps running while the statement x > 120 is true)

2. Use a for loop when you need to initialize a variable, state a condition, and increment/decrease, because you can do all of this in one line. (Ex. for (int i = 0; i < 10; i++) this initializes i as 0 makes the condition that i has to be less than 10 and adds 1 to i each time.