1. Loop structures allows a block of code to be repeated based on a certain condition, which allows the code to continue running until the specific condition is met or is false.

2. A while statement checks the condition before running the block of code, if the condition is not met, the block of code may not run at all. In a do-while loop, the block of code gets run at least once as it checks the condition after the block of code.

3. In the Guessing Game Mastery.

4a. An infinite loop is a block of code that is repeated indefinitely due to the condition never being met/ending.

b. Syntax errors and logical errors.

c. Overflow occurs in infinite loops when the value stored becomes too large without enough bits to store it. This can cause run-time errors or cause a condition to become false, ending a loop as it can change the sign of the value stored.

5. 60

6. x = 117

7. Counter is used to keep track of how many times something occurs (increases/decreases by fixed increments), while accumulators are used to sum up all the values that are entered, meaning it has to be initialized beforehand. Counters can be used to counter how many times a user enters something or how many times a loop repeats. Accumulators can be used to add up the total cost of items entered or to find the total time spent on a task per day.

8.

```
sum = 0;
for (int i = 3, i <= 10, i += 1) {
        sum  += i;
}
```

9. If you know how many times the code needs to be iterated and if the execution of the block of code needs to run at least once.