The output of this code is pretty simple and easy to understand once you dive into the code line by line. But before I do that we can look into the code and immediately determine some things. The first thing we notice about the code is that there are two print statements. This tells us that there are going to be at least two outputs that this code gives us. We can also see an if statement. This means that the print statement below it could return more than one value depending on if the code above the if statement fits inside the parameters. We can end up determining that the first print statement underneath of the if statement is going to return two different outputs (we will see why once we go through the code line by line later). But since there are two times this print statement will activate, we can assume that each of those outputs will be on separate lines, since this is the way python does print statements. after that we can then look at the last print statement. In this print statement we can see a phrase with a single quote around it. This means that python will print that exact thing that is surrounded by the quotes. The print statement then has it printing out a comma, and then three more values with commas in between. The commas will just list these values one after the other, and not actually print out the commas, since they are not surrounded by quotations. The values that are to be printed are all typed out as 'list' followed by square brackets and then a number. After going through the code, we can determine that these values mean that we are taking the term within the square brackets and finding that value within the list. For example, for the phrase "list[5]" we are finding the fifth term in list. We are then adding one to each of these values because of the line "counter = counter + 1". once we get the value of the terms after doing that, they will print one after the other, with a space separating them thanks to the commas. So, after all that, we determine that python will print the two values it obtains from the if statement on their own lines, and then will print another line with the phrase "Final Report: " followed by the three values obtained from the list values.

So, python will return:

10

11

Final Report: 12 15 18

Now we will break down the code line by line:

Line 1: declares a list object, which is also conveniently assigned the variable “list”. This list object will serve as a kind of bucket to store values for the rest of the program to pull from when needed. The values within the list are also defined as number values, with their being ten values.

Line 2: Declares a variable named “counter” and then sets the default value of that variable to 0.

Line 3: Begins a for loop that will go through each value from the list

Line 4: First indents the line, because it is nested within the for loop. The line then restates the counter variable, but then adds onto the for loop, stating that each value of the list gets one added to the total of that value. The line then stores that value back into the counter variable.

Line 5: This line is first also indented, since it is also nested within the for loop. The line then tests the value of the counter variable with an if statement. The if statement checks if the value is less than three, so the program knows if it has to continue on to line 6, or loop back through the for loop.

Line 6: This line is indented even farther, since it is nested within the for loop, and the if statement. The line executes if the if statement says that the value of the counter variable is less than three, the value of the counter variable is then printed out. If the value is not less than three, then the program cycles back through the for loop for the next value of the list. Each time the value of the counter variable is less than three, the program prints it on a new line. This loop continues to cycle through each value in the list, until it is finished.

Line 7: This line is used as white space to separate the code and make it easier to read, and also to disconnect the next code from the previous block.

Line 8: The line is printing out the characters within the parentheses. In this case, the program is printing out the exact phrase ‘Final Report: ‘ including the space. This is because anything within either single or double quotes is printed out exactly. The program is then printing out the integer values for the indexes of the list values 2, 5, and 7.