**Multiple choice questions**

1. Is the code shown an infinite loop? (Yes)  
A screenshot of a computer

Description automatically generated

2. How about this code? Is it an infinite loop? (Still Yes, because count is incrementing, not decrementing)  
A screenshot of a computer

Description automatically generated

3. A \_\_\_\_\_\_\_\_\_\_ -controlled loop uses a true/false condition to control the number of times that it repeats. (condition)  
A screenshot of a computer

Description automatically generated

4. A \_\_\_\_\_\_\_\_\_\_ -controlled loop repeats a specific number of times. (count)  
A screenshot of a computer

Description automatically generated

5. Each repetition of a loop is known as a(n) \_\_\_\_\_\_\_\_\_\_. (iteration)   
A screenshot of a computer

Description automatically generated

6. A(n) \_\_\_\_\_\_\_\_\_\_ variable keeps a running total. (accumulator)  
A screenshot of a computer

Description automatically generated

7. A(n) \_\_\_\_\_\_\_\_\_\_ is a special value that signals when there are no more items from a list of items to be processed. This value cannot be mistaken as an item from the list. (sentinel)  
A screenshot of a computer

Description automatically generated

8. It is not necessary to initialize accumulator variables. (False)  
A screenshot of a computer

Description automatically generated

9. In a nested loop, the inner loop goes through all of its iterations for every single iteration of the outer loop. (True)  
A screenshot of a computer error

Description automatically generated

10. To calculate the total number of iterations of a nested loop, add the number of iterations of all the loops. (False)  
A screenshot of a computer

Description automatically generated

11. The process of input validation works as follows: when the user of a program enters invalid data, the program should ask the user "Are you sure you meant to enter that?" If the user answers "yes," the program should accept the data. (False)  
A screenshot of a computer

Description automatically generated

12. The process of input validation works as follows: when the user of a program enters invalid data, the program rejects the data and asks the user again to enter the data. (True)  
A blue line with black text

Description automatically generated

**Algorithm Workbench (Answers in GitHub)**

1. Write a while loop that lets the user enter a number. The number should be multiplied by 10, and the result assigned to a variable named product. The loop should iterate as long as the product is less than 100.

2. Write a while loop that asks the user to enter two numbers. The numbers should be added, and the sum displayed. The loop should ask the user if he or she wishes to perform the operation again. If so, the loop should repeat, otherwise it should terminate.

3. Write a for loop that uses the range function to display all odd numbers between 1 and 100.

4. Write code that prompts the user to enter a positive nonzero number and validates the input.

5. Write code that prompts the user to enter a number in the range of 1 through 100 and validates the input.

6. Write a program to calculate the average grade of four students. Each student has 3 grades to be averaged. The program will ask the user to input the grades of each student. After the grades are entered for each student, the average grade for each student will be displayed.