Assignment SU6: Recursion and the MyLinkedList class

Objective:

The objective of this assignment is to develop and test a Java program that utilizes the MyLinkedList class. The program will allow users to input a series of integers, store them in a linked list, and then use the Multiply() method of the MyLinkedList class to generate a new list where each element is the result of multiplying the corresponding element of the original list by 5. The multiplication process will involve a recursive method called TimesFive().

Instructions:

1. Implement the Multiply() method:

2. Add the Multiply() method to the `MyLinkedList` class.
3. The `Multiply()` method should iterate through the linked list and generate a new linked list where each element is the result of multiplying the corresponding element of the original list by 5.
4. The multiplication should be performed by the recursive method named `TimesFive()`.

2. Implement the recursive TimesFive() method:

-   Add the TimesFive() method to the `MyLinkedList` class.

3. Develop the Test Program:

-   Create a main program that:
-   Prompts the user to enter a series of integers.
-   Continues to accept input until the user enters a negative number.
-   Stores the entered numbers in a `MyLinkedList` instance.
-   Calls the `Multiply()` method to create a new list with the multiplied values.
-   Displays the original list (Question List) and the resulting multiplied list (Answer List).

4. Testing and Validation:

  - Test your program with different sets of input to ensure that the MyLinkedList class and the Multiply() method work correctly and that the recursive TimesFive() method accurately multiplies the elements.

Example Output:

```
Enter a number (a negative number to STOP): 3
Enter a number (a negative number to STOP): 4
Enter a number (a negative number to STOP): 8
Enter a number (a negative number to STOP): 6
Enter a number (a negative number to STOP): 9
Enter a number (a negative number to STOP): 10
Enter a number (a negative number to STOP): -1
Question List = [3,4,8,6,9,10]
Answer list = [15,20,40,30,45,50]
```

Make sure your code is unique. If your code matches that of another student, or you made use of code sourced from the Internet or AI, you will get 0.
Submit only the .java files. Make sure you submit all Java files required for the program to compile and run.