Practice Test

Determine the value of *mystery* after running the following code segments by hand:

1.

```
String word = "programming";
int length = word.length();
boolean isLong = length > 8;
char firstChar = word.charAt(0);
boolean startsWithA = (firstChar == 'a');
boolean mystery = (isLong && startsWithA);
```

2.

```
int a = 15;
int b = 4;
String mystery = "";
if (a % b == 3)
{
    if (a < 10)
        mystery = "first";
    }
    else
    {
        mystery = "second";
    }
}
else if (b < 5)
{
    mystery = "third";
}
else
{
    mystery = "fourth";
}
```

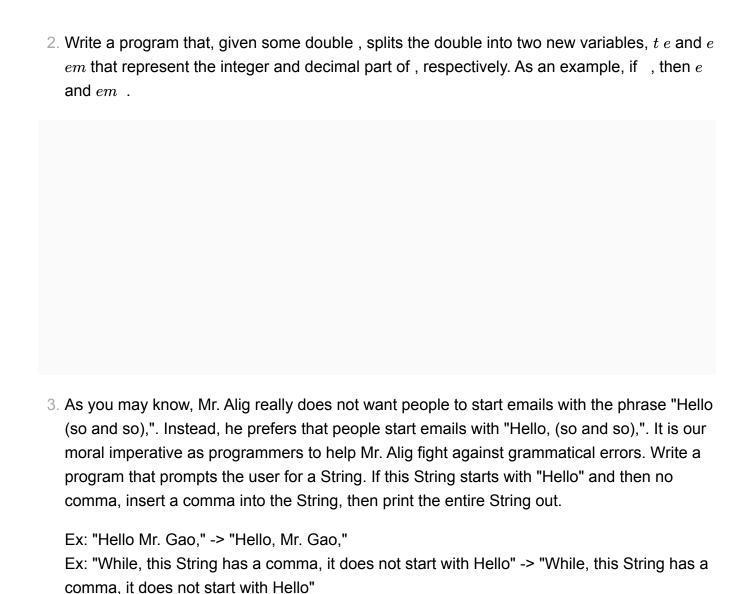
```
String word = "programming";
int length = word.length();
String mystery1 = word.substring(length / 3);
int index = word.indexOf("m");
String mystery2 = word.substring(index - 1, index);
String mystery3 = mystery1.substring(index);
String mystery = mystery1 + mystery2 + mystery3;
```

Write programs in Java to solve the following problems.

1. You are studying for an upcoming test. If you don't study enough for the test, you will do poorly. If you study too much, you'll get tired, and then do poorly. In fact, how well you do on the test corresponds to the piecewise function x:

```
x x x x x x x
```

Write a computer program that declares and initializes an integer x representing how long you will study for an upcoming test. Then, using the formula above, print out a prediction for your score on the test.



import java.util.Scanner;

// write code below