Pencil and paper assignment for lesson 7

1) ÷ Provides "stack overflow" error because (d)

a) In the main function "new MyClass()" object is created of 'MyClass' class. This will look in the constructor MyClass().

b) The constructor has "recurse("Hello") method call.

c) The 'recurse' method seems like recursive method.

d) if(s==null) return null; ~~does math~~ is false so any random number r= will be assigned. Another line will assign length of string ie 5 to n. After that (r%2==0) condition will result in either of condition. For eg. if odd then

S.substring(0, n/2) could result in
S.substring(0, 5/2) = substring(0, 2) = He.
This is recursive method call with s = 'He'.

- The recursive self call ultimately leads to s = "" But the base call has only condition for n=null which leads to the recursive method calling itself infinitely ~~not~~ resulting in 'stack overflow'.

2) Why 'stack overflow"

- In the main function 'myclass()' class object is created resulting in calling constructor

MyClass();

- The 'MyClass()' constructor has a method call 'recurse("Hello")' which calls the method.

- The code will generate 'stack overflow' because the line of code in method body

- Base condition is free from error like null pointer because of

equals(""); this will prevent that

- Main issue with recursion is that there is no increasing or decreasing criteria to stop recursion at any point like.

Str s = permute(s) length is equal all the time during program run

- Also the return doesnot have increasing, decreasing factor.