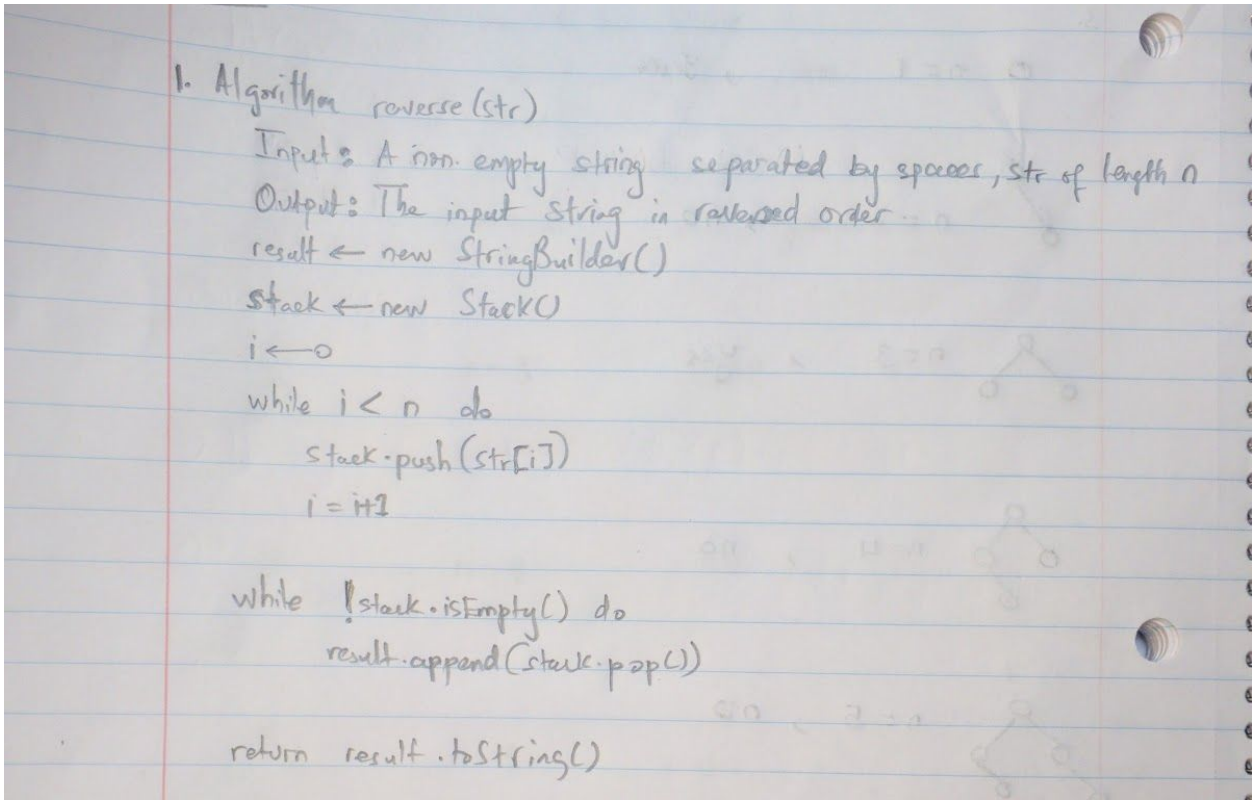
Problem 1



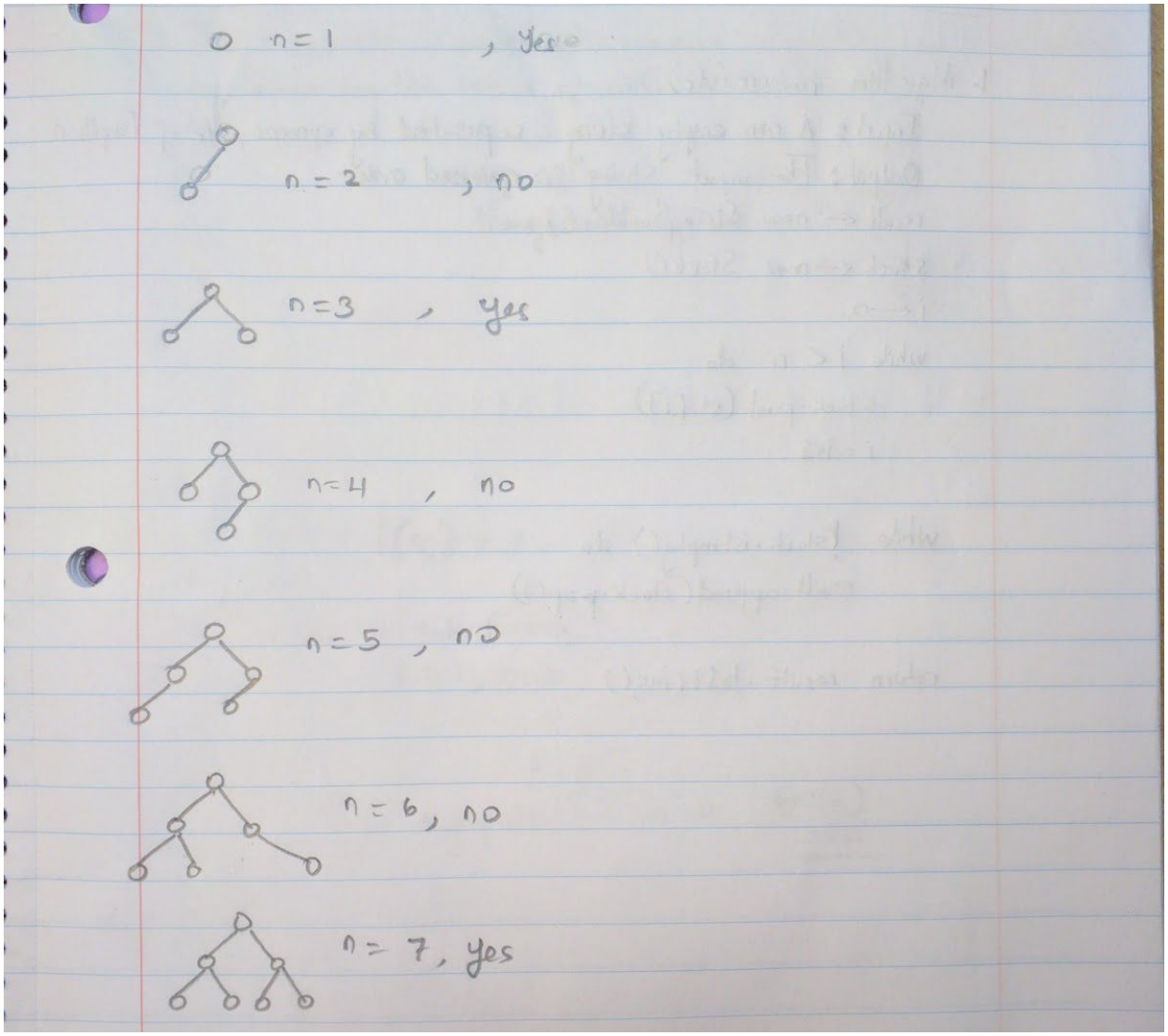
1. Algorithm reverse(str)

Input: A non-empty string separated by spaces, str of length n

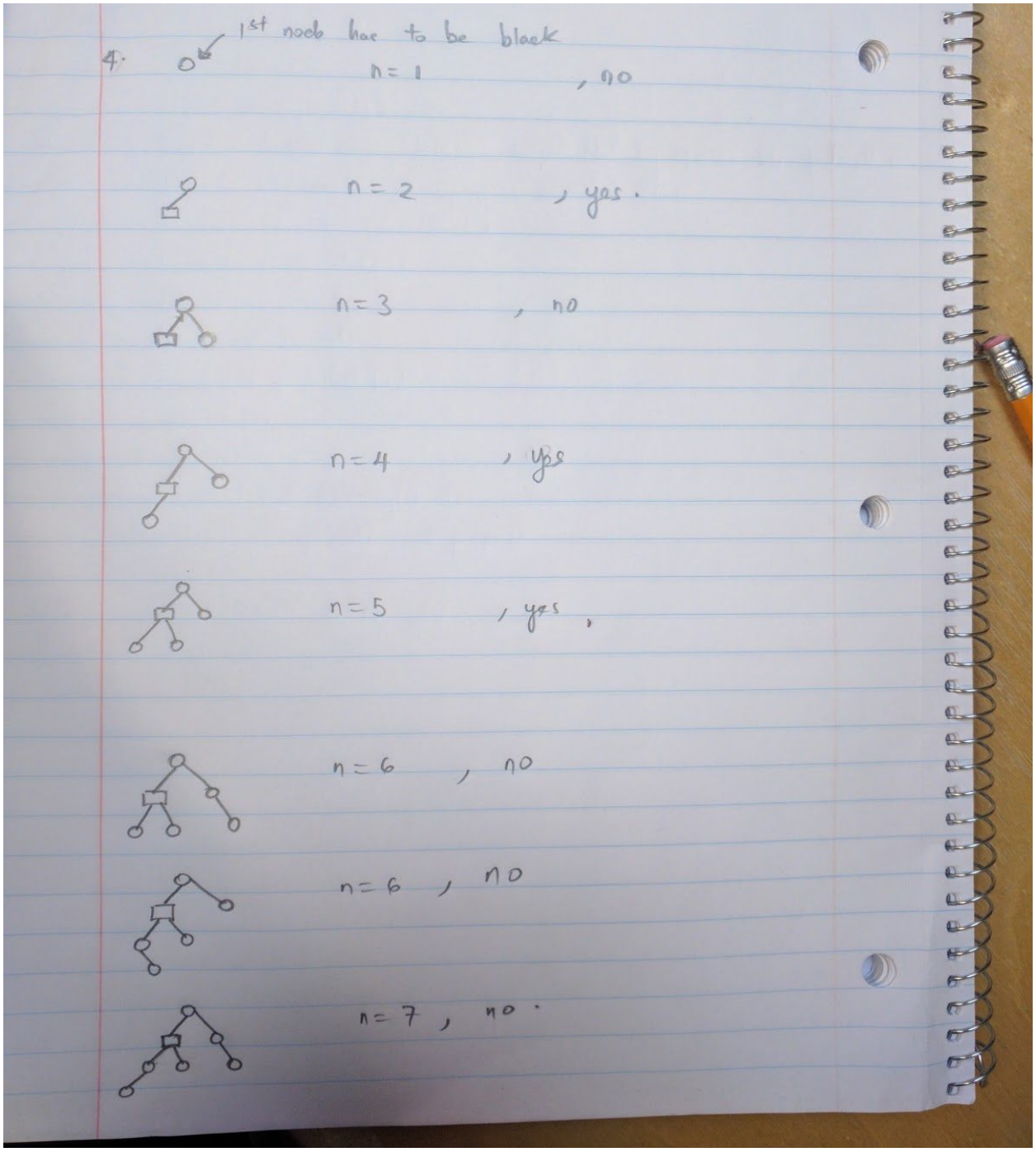
Output: The input string in reversed order

```
result ← new StringBuilder()
stack ← new Stack()
i ← 0
while i < n do
    stack.push(str[i])
    i = i+1

while !stack.isEmpty() do
    result.append(stack.pop())

return result.toString()
```

Problem 3



Problem 4


4.
1st node has to be black
n = 1 , no
n = 2 , yes.
n = 3 , no
n = 4 , yes
n = 5 , yes.
n = 6 , no
n = 6 , no
n = 7 , no.