Homework 5

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1 Name Analysis

I discussed Question 1.2 with Tyler Palsulich as I did not quite understand what it was trying to ask. He gave me some clarification, but we did not discuss the answer in detail.

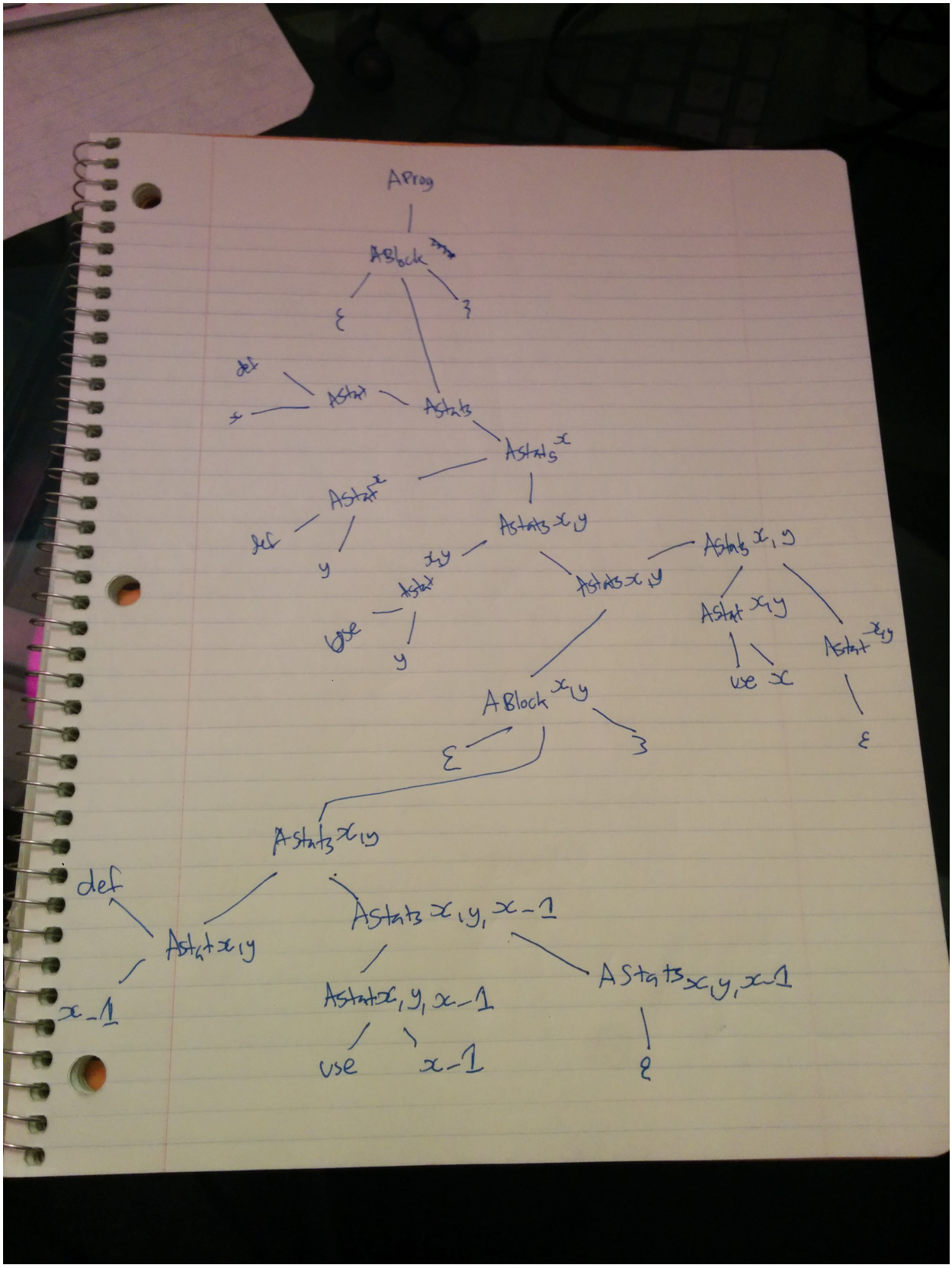
1.1 Question 1.1

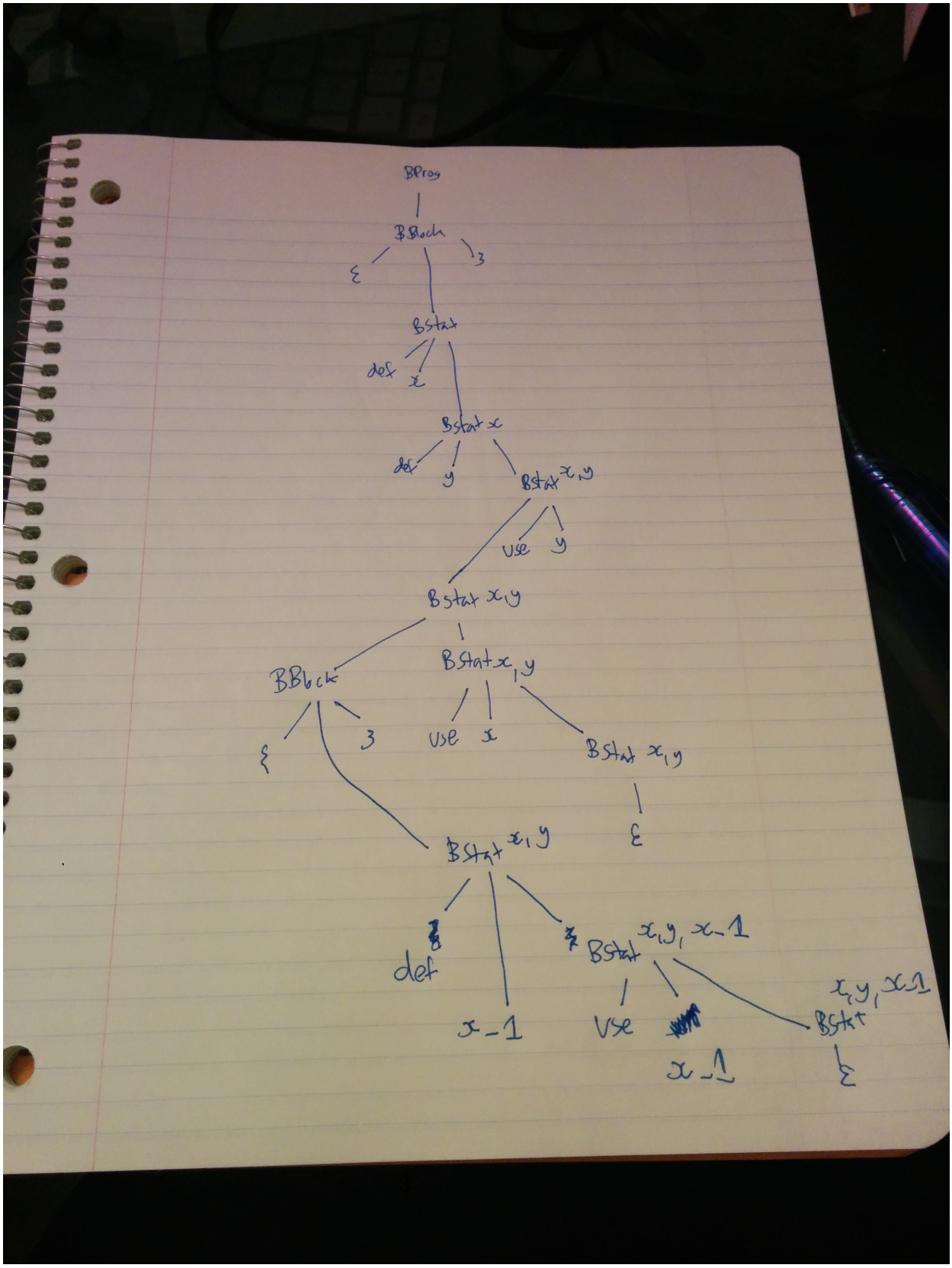
For the first grammar the section where AStats -> AStats -> AStats -> ϵ, and AStats -> AStat -> use -> x_1 has to be in an order where AStat -> use -> $x_1$is before the other. Both of the grammars generate the same language, but we can see that they generate different parse trees.

For the second grammar I notice that my syntax is not too different for { and }, and ϵ. But under BBlock it is { and }, and under BStat it is ϵ

My x_1 is a different x, I did not find any other way to define it. It is just an x defined in a different scope.

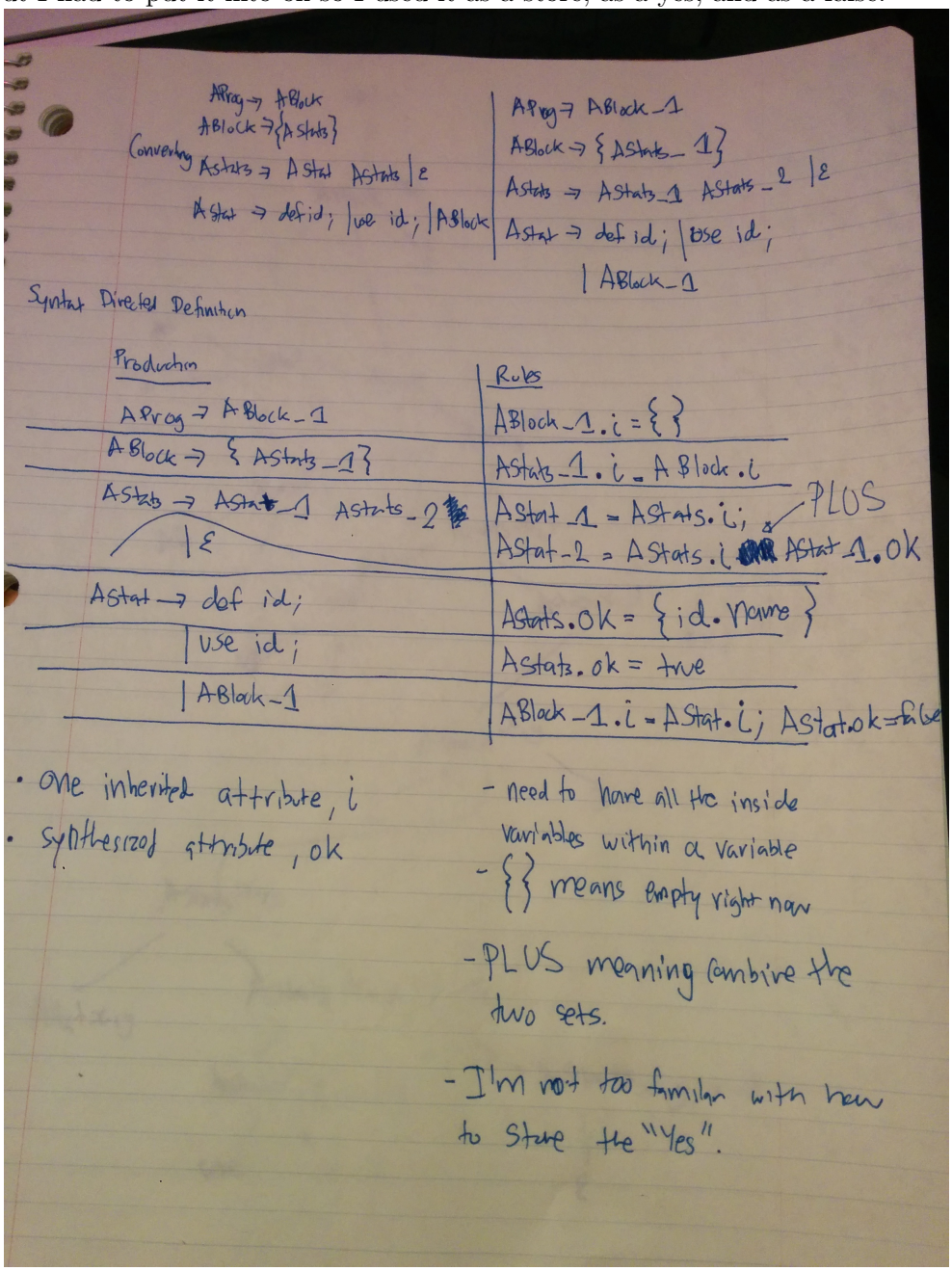
The two grammars are the same language.


AProg
ABlock
{
}
def
x
AStat
AStats
AStats x
AStat x
def
y
AStats x,y
x,y
AStat
use
y
AStats x,y
AStats x,y
AStat x,y
use x
AStat x,y
ε
ABlock x,y
ε
}
AStats x,y
def
AStat x,y
AStats x,y,x-1
x-1
AStat x,y,x-1
AStats x,y,x-1
use
x-1
ε


BProg
BBlock
{
}
BStat
def
x
BStat x
def
y
BStat x,y
use
y
BStat x,y
BBlock
BStat x,y
{
}
use
x
BStat x,y
BStat x,y
ε
def
x_1
BStat x,y,x_1
use
x_1
BStat x,y,x_1
ε

1.2 Question 1.2

I didn't quite understand this, but my logic was to try and keep track of the variables and when that particular id was used I would assign yes. I could not just put everything into i, but I had to put it into ok so I used it as a store, as a yes, and as a false.



1.3 Question 1.3