

Test case 1

```
varX = VarParseTree('x')
two = NumParseTree(2)
as1 = AssignParseTree(varX,two)
e1 = MulParseTree(varX,varX)
as2 = AssignParseTree(varX,e1)
pgm1 = SCompParseTree(as1,as2)
print(pgm1)
print(pgm1.interpret({}))
print(l2s(pgm1.compile()))
print(VM(pgm1.compile()).run())
```

```
x := 2 ;
x := x * x ;
```

Test case 2

```
varX = VarParseTree('x')
varY = VarParseTree('y')
two = NumParseTree(2)
as1 = AssignParseTree(varX,two)
as2 = AssignParseTree(varY,two)
e1 = MulParseTree(varX,varX)
e2 = MulParseTree(varY,varY)
as3 = AssignParseTree(varX,e1)
as4 = AssignParseTree(varY,e2)
e3 = MulParseTree(varX,varY)
as5 = AssignParseTree(varX,e3)
pgm1 = SCompParseTree(as1,as3)
pgm2 = SCompParseTree(pgm1,as3)
pgm3 = SCompParseTree(pgm2,as3)
pgm4 = SCompParseTree(pgm3,as2)
pgm5 = SCompParseTree(pgm4,as4)
pgm6 = SCompParseTree(pgm5,as5)
print(pgm6)
print(pgm6.interpret({}))
print(l2s(pgm6.compile()))
print(VM(pgm6.compile()).run())
```

```
x := 2 ;
x := x * x ;
x := x * x ;
x := x * x ;
y := 2 ;
y := y * y ;
x := x * y ;
```