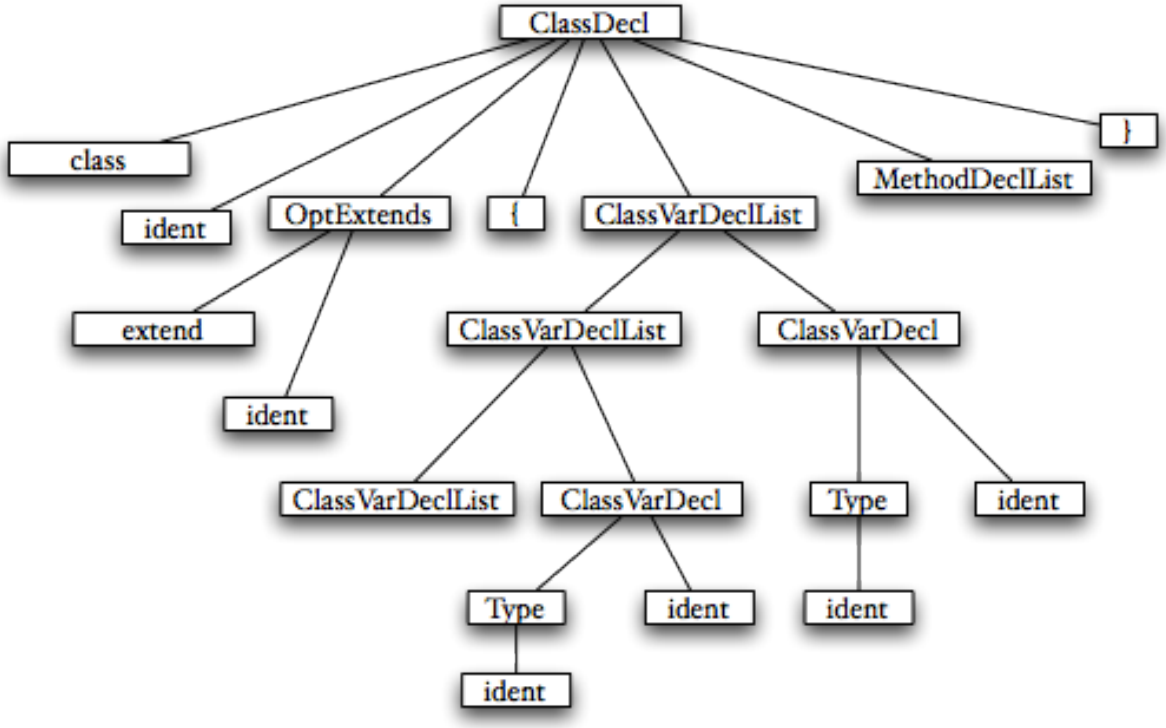
Intermediate Representations Worksheet

Abstract Syntax Trees

1. Below is a parse tree for a portion of a MiniJava program. Cross off the nodes that could be eliminated in an abstract syntax tree representation. (There are a variety of nodes that one might choose to eliminate; make some reasonable choices.)



Draw a directed-acyclic graph representing the expression: **`y + 3 * y`**

Draw a control flow graph for the following code:

```
1.    x = 0;
2.    if (flag) {
3.        y = 1;
4.    } else {
5.        x = 2 * x;
6.        y = 3;
7.    }
8.    x = x * y;
```

Draw a dependence graph for the code from the previous question.