1. Consider the following VC program:

```c
void f(float f, int i) {
  float i;
  int j;
  {
    int f;
    int main;
  }
}
void main() {
  f(1,2.0);
}
```

(a) List the scope levels of all declared variables.
(b) Identify all semantic errors.

2. Consider the following grammar for a simple language:

```
stmt-list -> stmt-list stmt
stmt-list -> stmt
stmt -> id = expr
expr -> expr + expr
expr -> expr and expr
expr -> id
expr -> num
expr -> true
expr -> false
```

where `id` is a token representing an identifier, `num` is a token representing an integer literal and `true` and `false` are two boolean literals. It is assumed that `id.type` denotes the type of an `id`, which is either "int" or "boolean".

The type rules for the language are as follows:

- Both operands of + must be of type int
- Both operands of and must be of type boolean
- Both sides of = must be of the same type

Give an attribute grammar to type check all expressions.