

CSE 401 - Ambiguity Worksheet - Week 2

1. Consider the following syntax for expressions involving addition and field selection:

```
expr ::= expr + field  
expr ::= field  
field ::= expr . id  
field ::= id
```

- a) Show that this grammar is ambiguous.

- b) Give an unambiguous context-free grammar that fixes the problem(s) with the grammar in part (a) and generates expressions with `id`, field selection, and addition. As in Java, field selection should have higher precedence than addition and both field selection and addition should be left-associative (i.e. `a+b+c` means `(a+b)+c`).