

**17-363/17-663: Programming Language Pragmatics, In-Class Exercises**    **September 20, 2022**

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1. [Top-Down Parsing] Convert the following LR(1) grammar to an LL(1) grammar:

```
program  → expr $$$  
expr     → term | expr + term  
term     → id | id ( expr )
```

2. [Grammar comparisons] Consider your LL(1) grammar above. What advantages or disadvantages does it have compared to the LR(1) grammar given in the question?