IB Compiler Construction - Supervision 2

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Due noon before the day of supervision

1. 2018 Paper 4 Q3

2. 2018 Paper 3 Q4

3. Why is the following grammar ambiguous?

   ```
   S ::= E $
   E ::= INT | E + E | E - E
   ```

   Show how the ambiguity can be resolved, relying the usual evaluation order.

   Implement a LL(1) parser in an imperative style, using the following functions:

   - `Peek()`: returns the lookahead token
   - `Next()`: advances the stream

   Try to construct the `LR(0)` DFA of the disambiguated, as explained in the notes, indicating conflicts. Construct the `LR(1)` DFA of the disambiguated grammar.

4. Why is the following grammar ambiguous?

   ```
   S ::= E $
   E ::= INT | E + E | E * E
   ```

   Resolve the ambiguity.