

Daehee Kang  
CECS 424  
Professor JuCheol Moon  
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## Homework #1

### 1. Chapter 2.6 Exercise 2.1 (f)

\*(f) Financial quantities in American notation. These have a leading dollar sign (\$), an optional string of asterisks (\*— used on checks to discourage fraud), a string of decimal digits, and an optional fractional part consisting of a decimal point (.) and two decimal digits. The string of digits to the left of the decimal point may consist of a single zero (0). Otherwise it must not start with a zero. If there are more than three digits to the left of the decimal point, groups of three (counting from the right) must be separated by commas (,). Example: \$\*\* 2,345.67. (Feel free to use “productions” to define abbreviations, so long as the language remains regular.)

|             |                    |  |   |
|-------------|--------------------|--|---|
| Dollar sign | Optional asterisks | Case 1. Zero<br>Case 2. Non-zero first digit<br>Case 2-1. three or less digits<br>Case 2-2. more than three digits | Case 1. No decimal point<br>Case2. With decimal point |
| \$          | (*)*               | (0 nonZeroDigit( $\epsilon$  digit digitdigit ,digitdigitdigit)*)  | (.digitdigit  $\epsilon$ )                            |

**Where**

**digit** -> 0|1|2|3|4|5|6|7|8|9

**nonZeroDigit** -> 1|2|3|4|5|6|7|8|9