CS 321: Assignment 6

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1. Foo

2. $S \rightarrow aSddd|T$
   $T \rightarrow bTdd|R$
   $R \rightarrow cR|\epsilon$

   Eliminate the start symbol from right-hand sides $S_0 \rightarrow S$
   $S \rightarrow aSddd|T$
   $T \rightarrow bTdd|R$
   $R \rightarrow cR|\epsilon$

   (b) **TERM: Eliminate rules with nonsolitary terminals**
   $S_0 \rightarrow S$
   $S \rightarrow S_1SS_2S_3S_4|T$
   $T \rightarrow T_1TT_2T_3|R$
   $R \rightarrow R_1R|\epsilon$

   $S_1 \rightarrow a$
   $S_2 \rightarrow d$
   $S_3 \rightarrow d$
   $S_4 \rightarrow d$

   $T_1 \rightarrow b$
   $T_2 \rightarrow d$
   $T_3 \rightarrow d$

   $R_1 \rightarrow c$

   (c) **BIN: Eliminate right-hand sides with more than 2 nonterminal** $S_5 \rightarrow S_1S$
   $S_6 \rightarrow S_2S_3$
   $S_7 \rightarrow S_5S_6$
   $S \rightarrow S_7S_4|T$

$S_1 \to a$
$S_2 \to d$
$S_3 \to d$
$S_4 \to d$

$T_4 \to T_1 T$
$T_5 \to T_2 T_3$
$T \to T_4 T_5 | R$

$T_1 \to b$
$T_2 \to d$
$T_3 \to d$

$R \to R_1 R | \epsilon$

$R_1 \to c$

(d) **DEL: Eliminate ϵ-rules**

(e) **UNIT: Eliminate unit rules**

3. Answer

(a) **question:** Does this mean $k \neq m \neq n$?