Exercise 1

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1 Regular languages, NFAs and DFAs

1.1

The issue here is the left recursion in the statement L -> L;I | I
It represents a list of one or more ;-separated I-s, so it can easily be made right recursive instead.
L -> I | I;L
The new statement has a common prefix in the two cases, so it must be left factored. This produces
L -> II'
I' -> ε | ;L

1.2

NT	First	Follow	Null
S	s	$	No
C	c	x	No
L	i	d y	No
I	i	; d y	No
I'	;	d y	Yes
D	d	y	Yes

1.3

NT T	s	x	y	c	;	i	d
S	S->sCxLDy						
C				C -> c			
L					L -> II'		
I					I -> i		
I'			I' -> ε			I' -> ;L	I' -> ε
D			D -> ε				D -> d