

# Math 3342

## Homework # 7

Chapter 13: 1, 2, 4, 5, 6a

1. Original is:

	read	pop	push
1.	a	S	S1
2.	$\epsilon$	S	$\epsilon$
3.	b		$\epsilon$

we want to force rule 1. to happen before we can do 2.

Many ways to do this, but I said:

	read	pop	push
	a	S	T1
	a	T	T1
	$\epsilon$	T	$\epsilon$
	b		$\epsilon$

#2  $a^n c b^n$  : change above, use  $c$  S  $\epsilon$  instead of  $\epsilon$  S  $\epsilon$ .

	read	pop	push
1.	a	S	S1
2.	c	S	$\epsilon$
3.	b		$\epsilon$

#4

Inspired by example on pg 165

read	pop	push
a	S	a
b	S	b
c	S	$\epsilon$
a	a	$\epsilon$
b	b	$\epsilon$

#5

$\{ (ab)^n (ba)^n \}$  Easiest to do grammar first:

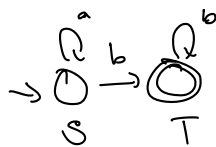
$$S \rightarrow abSba \mid \epsilon$$

read	pop	push
$\epsilon$	S	abSba
$\epsilon$	S	$\epsilon$
a	a	$\epsilon$
b	b	$\epsilon$

#6 a

$a^*b^*$

is



read	pop	push
a	S	S
b	S	T
b	T	T
$\epsilon$	T	$\epsilon$