

Math 3342

Homework #8

Chptr 12 #1f, 1j

Chptr 13 #2, 6g

12 #1f  $\{a^n b^m \mid m > 2n\}$

(make  $m = 2n$ , then some extra b's)

$S \rightarrow aSbb \mid T$

$T \rightarrow bT \mid b$

12 #1j  $\{a^i b^n a^j b^n a^k\}$

  
balanced

$S \rightarrow ATA$

$T \rightarrow bTb \mid A$

$A \rightarrow aA \mid \epsilon$

13 #2

$\{a^n c b^n\}$

just like  $a^n b^n$  from class,  
but we read  $c$  in the middle  
instead of read  $\epsilon$

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

13 #6g  $\{ a^n b^n \mid n \text{ is even} \}$

force us to read 2 a's at a time by swapping S/T each time.

read	pop	push
a	S	TX
a	T	SX
$\epsilon$	S	$\epsilon$
b	X	$\epsilon$

← this line only works with S, not T. so n must be even.