

Math 3342 HW #8

6c, 6m, 6o, 12

6c $\{x \in \{0,1\}^* \mid |x| \text{ is div. by } 3\}$

read	pop	push
0	S	T
0	T	R
0	R	S
1	S	T
1	T	R
1	R	S
ϵ	S	ϵ

6m $\{ \underbrace{a^n}_{s_1} \underbrace{b^n c^j}_{s_2} \}$

read	pop	push
ϵ	S	$S_1 S_2$
a	S_1	$S_1 X$
ϵ	S_1	ϵ
b	X	ϵ
c	S_2	S_2
ϵ	S_2	ϵ

6o

read	pop	push
a	S	SX
s	S	T
b	T	TY
ϵ	T	ϵ
c	Y	ϵ
d	X	ϵ

12

$$S \rightarrow aOS \mid \varepsilon$$

$$O \rightarrow aOO \mid b$$

to derive abab:

$$S \Rightarrow aOS \Rightarrow abS \Rightarrow ab aOS \Rightarrow ababS \Rightarrow \underline{abab}$$