

Math 3342 HW #7

Chapter 12 #1 f, h, j, q

#1 f $\{a^n b^m \mid m > 2n\}$
 (make $m = 2n$, then extra b's)

$$S \rightarrow aSbb \mid T$$

$$T \rightarrow bT \mid b$$

#1 h $\{(ab)^n c (de)^n\}$

$$S \rightarrow abSde \mid c$$

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

$$S \rightarrow AXA$$

$$X \rightarrow bXb \mid A$$

$$A \rightarrow aA \mid \varepsilon$$

#1 q $\{a^n b^m c^m d^n\}$

$$S \rightarrow aSd \mid T$$

$$T \rightarrow bTc \mid \varepsilon$$