

LSA 308 homework #2

Due: Tuesday 17 July, 2007

1. Consider the following PCFG:

1.0	S	→ NP VP	1.0	Det	→ the
0.8	NP	→ Det N	0.5	N	→ children
0.2	NP	→ NP PP	0.5	N	→ parents
1.0	PP	→ P NP	1.0	P	→ of
1.0	VP	→ V	1.0	V	→ exist

For a sentence that starts with the word *the*, what is the probability that the second word is *children*? How many incremental trees, in the sense of Yngve (1960) or Jurafsky (1996), are consistent with the partial input *the ...?* with the partial input *the children ...?*