

CONVERSION TO CNF

Original Grammar

$S \rightarrow NP VP$	0.8
$S \rightarrow Aux NP VP$	0.1
$S \rightarrow VP$	0.1
$NP \rightarrow Pronoun$	0.2
$NP \rightarrow Proper-Noun$	0.2
$NP \rightarrow Det Nominal$	0.6
$Nominal \rightarrow Noun$	0.3
$Nominal \rightarrow Nominal Noun$	0.2
$Nominal \rightarrow Nominal PP$	0.5
$VP \rightarrow Verb$	0.2
$VP \rightarrow Verb NP$	0.5
$VP \rightarrow VP PP$	0.3
$PP \rightarrow Prep NP$	1.0

Chomsky Normal Form

$S \rightarrow NP VP$	0.8
$S \rightarrow X1 VP$	0.1
$X1 \rightarrow Aux NP$	1.0
$S \rightarrow book \mid include \mid prefer$ 0.01 0.004 0.006	
$S \rightarrow Verb NP$	0.05
$S \rightarrow VP PP$	0.03
$NP \rightarrow I \mid he \mid she \mid me$ 0.1 0.02 0.02 0.06	
$NP \rightarrow Houston \mid NWA$ 0.16 .04	
$NP \rightarrow Det Nominal$	0.6
$Nominal \rightarrow book \mid flight \mid meal \mid money$ 0.03 0.15 0.06 0.06	
$Nominal \rightarrow Nominal Noun$	0.2
$Nominal \rightarrow Nominal PP$	0.5
$VP \rightarrow book \mid include \mid prefer$ 0.1 0.04 0.06	
$VP \rightarrow Verb NP$	0.5
$VP \rightarrow VP PP$	0.3
$PP \rightarrow Prep NP$	1.0