Worksheet 8.3: Phrase Structure (PS) rules

Problem Set 4:

The set of PS rules in the PPT slide includes two instances that generate the same phrase, namely NP (the cat/the mice – i/them/Tom/Jerry).

Try to think of a standard notation that makes it possible to reduce the two rules repeated below to one rule that generates both patterns.

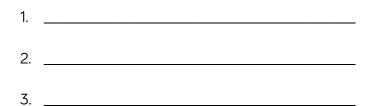
 $NP \rightarrow Det N$ $NP \rightarrow N$

Problem Set 5:

Make up simple sentences generated by the PS rules. Use **only** the PS rules below and the words given below. Don't use any other words that are not listed for each example.

$S \rightarrow NP VP$	N = dogs, birds, cows
$NP \rightarrow Adj N$	Adj = curious, cute, nervous
$VP \rightarrow V$	V = bark, fly, sleep

Give three sentences which can be generated by the rules and words above:









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Problem Set 6:

Write the PS rules needed for the following examples (they all translate to 'the big dog'):

English	French	German	Italian	Spanish
the big dog	le grand chien	der große Hund	il cane grande	el perro grande



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Solutions to Worksheet 8.3

Problem Set 4:

• The required notation is one that encodes optionality of occurrence.

 $NP \rightarrow (Det) N$

• The single rule above generates NPs that consist of Det and N as well as NPs that consist of N alone.

	NP	NP
Det	Ν	Ν
the	cat/mice	it/them/Tom/Jerry

Problem Set 5:

Any adjective – Noun – Verb combination allowed from a syntax point of view:

Some examples:

Nervous dogs bark.

Cute cows sleep.

Curious birds fly.

Problem Set 6:

English	French	German	Italian	Spanish
the big dog	le grand chien	der große Hund	il cane grande	el perro grande
$NP \rightarrow Det Adj N$	NP ightarrow Det Adj N	NP ightarrow Det Adj N	NP ightarrow Det N Adj	$NP \rightarrow Det N Adj$







