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HW#4

1. Grammar Part 1.

% enter your rules

s --> np, vp.

np --> det, n.

vp --> vp, pp.

vp --> v, np.

pp --> p, np.

np --> np, pp.

% enter your lexical rules

n --> [dogs].

n --> [cats].

n --> [garden].

det --> [the].

p --> [in].

v --> [chased].

1. Grammar Part 2.

% enter your rules

s(s(NP, VP)) --> np(NP), vp(VP).

np(np(DET, N)) --> det(DET), n(N).

vp(vp(VP, PP)) --> vp(VP), pp(PP).

vp(vp(V, NP)) --> v(V), np(NP).

pp(pp(P, NP)) --> p(P), np(NP).

np(np(NP, PP)) --> np(NP), pp(PP).

% enter your lexical rules

n(n(dogs)) --> [dogs].

n(n(cats)) --> [cats].

n(n(garden)) --> [garden].

det(det(the)) --> [the].

v(v(chased)) --> [chased].

p(p(in)) --> [in].

1. Table for Part 3

|  |  |
| --- | --- |
| Number of PPs | Number of possible trees |
| 0 | 1 |
| 1 | 2 |
| 2 | 5 |
| 3 | 14 |
| 4 | 42 |

1. Catalan number (sequence) relates the number of PPs and the number of trees.