

## Power and sequences of Binomial type

$\forall R$  : Combinatorial species ,  $\forall \lambda \in \mathbb{N}$

$$R^\lambda(x) = \sum_{n \in \mathbb{N}} r_n(\lambda) \cdot \frac{x^n}{n!}$$

### Lemma

$$\forall n, \lambda, \mu \in \mathbb{N} r_n(\lambda + \mu) = \sum_{k=0}^n \binom{n}{k} r_k(\lambda) \cdot r_{n-k}(\mu)$$

Proof:

$$R^{\lambda+\mu} = R^\lambda \circ R^\mu$$

Now you can get the lemma trivially by comparing coefficients