```
Cat
CatCat
P(n)
Cat
Cat
\frac{P}{P}
\frac{P}{P}
\frac{P}{P}
\frac{P}{P}(X) = \coprod_{n} P(n) \times_{\Lambda(n)} X^{n},
               [p; x_1, \dots, x_n]
p \in P(n)
x_i \in X
[p; \underline{x}]
\frac{P}{\alpha}; f \Rightarrow g
\frac{P(\alpha)}{P(\alpha)}
[p; x_1, \dots, x_n]
                                      [p; x_1, \ldots, x_n]
                              [1_p; \alpha_{x_1}, \dots, \alpha_{x_n}]
                       \begin{array}{c} P(X) \\ P(X) \\ P(X) \\ P(X) \\ Cat \\ Cat \\ P(X) \\ P(X) \\ P(X) \\ P(X) \\ P(X) \\ P(X) \\ Cat \\ P(X) 

\begin{array}{l}
\overline{P}at \\
-Coll \\
\alpha_n : P(n) \times_{\Lambda(n)} \\
X^n \to X \\
\widetilde{\alpha}_n : P(n) \times X \\
X \to X \\
\widehat{A}n : P(n) \times X \\
\widehat{A}
                              P(n) \times \prod_{i=1}^{n} (P(k_i) \times X^{k_i}) \to P(n) \times \prod_{i=1}^{n} P(k_i) \times X^{\sum k_i} \mu^P \times 1P(\sum_{k_i}) \times X^{\sum k_i}
                       \mu^{P} \times 1 \in P(1)
\uparrow^{P} : 1 \rightarrow P(1)
\uparrow^{P} : 1 \rightarrow P(1)
\uparrow^{P} : 1 \rightarrow P(1)
\downarrow^{P} : 1 \rightarrow
                                      (\alpha_n: P(n) \times_{\Lambda(n)} X^n \to X)_{n \in N},
                       n, k_1, \dots, k_n \in N \\ \phi_{k_1, \dots, k_n}
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pseu-
do_{-n}
do_{-n}
do_{-n}
phism
P
f: X \rightarrow Y
n \in N
f_n
f: X \rightarrow Y
f_n
f: X \rightarrow Y
       (0,0)*+P_n \times X^n = "00";(20,0)*+X = "10";(0,-15)*+P_n \times Y^n = "01";(20,-15)*+Y = "11";>>>> \tilde{\alpha}_n"00";"10";
     (0,0)* + P_n \times \prod_i (P_{k_i} \times X^{k_i}) = "00"; (50,0)* + P_n \times \prod_i (P_{k_i} \times Y^{k_i}) = "10"; (0,-25)* + P_{\Sigma k_i} \times X^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k_i} \times Y^{\Sigma k_i} = "01"; (50,-25)* + P_{\Sigma k
       (0,0)*+X = "00"; (20,0)*+Y = "10"; (0,-15)*+1 \times X = "01"; (20,-15)*+1 \times Y = "11"; (0,-30)*+P_1 \times X = "02"; (20,0)*+P_1 \times X = "01"; (20,0)*+P_1 \times Y =
     (X, \alpha_n, \phi, \phi_\eta) 
 (Y, \beta_n, \psi, \psi_\eta) 
 P. . . .
(Y, \beta_n, \psi, \psi_\eta)
P
Strict
phism
P
f_n
P
Cat
gar
gar
P
f_n
f(\sigma, g, x_1, \dots, x_n) \in P(n) \times \Lambda(n) \times Y_n
 \begin{array}{l} P(n) & \wedge \\ \Lambda(n) \times \\ X^n \\ \left(\overline{f}_n\right)_{(\sigma \cdot g, x_1, \dots, x_n)} = \left(\overline{f}_n\right)_{\left(\sigma, x_{\pi(g)^{-1}(1)}, \dots, x_{\pi(g)^{-1}(n)}\right)}. \end{array}
   \begin{array}{l} P \\ f,g\colon (X,\alpha,\phi,\phi_\eta) \to \\ (Y,\beta,\psi,\psi_\eta) \\ P \\ P \\ transformation \\ \uparrow \quad \uparrow \quad \uparrow \\ \end{array}

\gamma: f \stackrel{\circ}{\Rightarrow} \\
g \\
n

     (0,0)*+P_n\times X^n="00";(30,0)*+P_n\times Y^n="10";(0,-20)*+X="01";(30,-20)*+Y="11";@/^1.5pc/^{1\times f^n}"00";"10"
   \begin{array}{c} 2\\ P\\ PAlg_s\\ P\\ PsPAlg\\ P\\ S\\ Kat\\ TK\\ K\rightarrow \end{array}
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