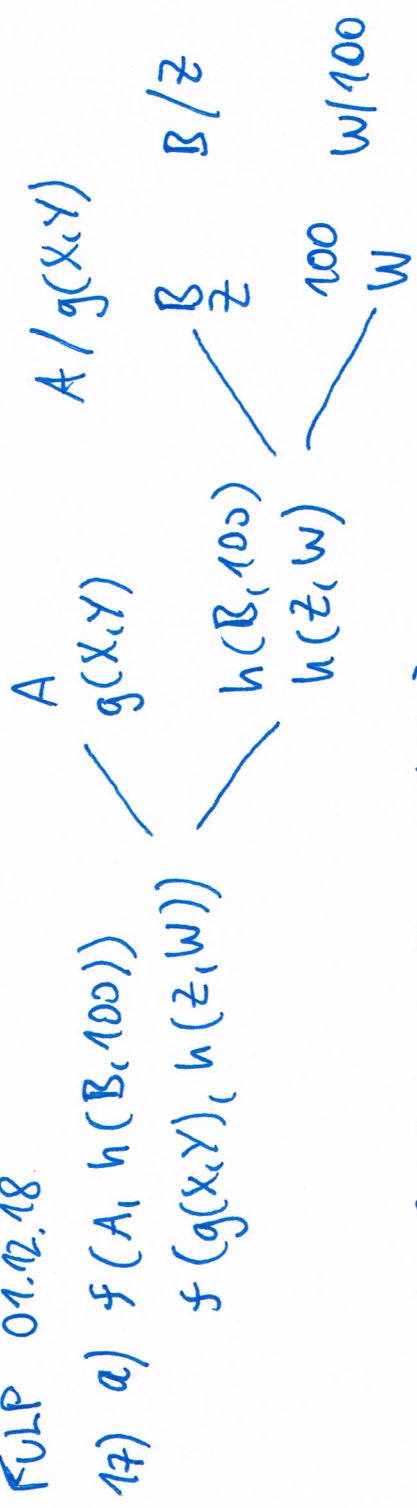




$$\sigma = \{A/g(X, Y), B/Z, W/100\}$$

$$\sigma(t_1) = \sigma(t_2) = f(g(X, Y), h(Z, 100))$$

b) $f(X, g(Y, a), g(Y, b))$ $\swarrow$ g

$f(X, g(Y, b), Z)$ $\swarrow$ g

c) $f(g(X), Y)$ $\swarrow$ $g(X)$ X $g(X)/X$

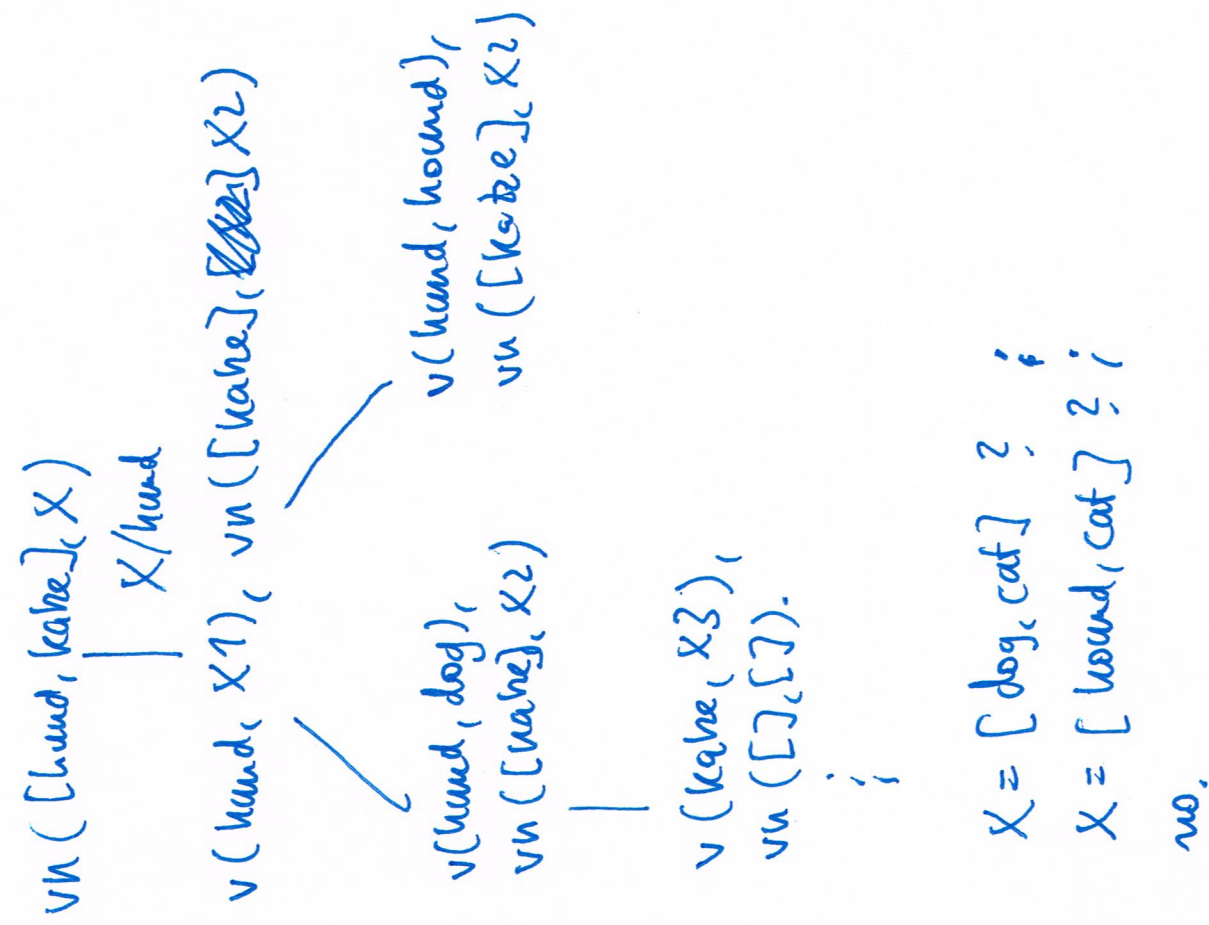
$f(X, h(Z))$ $\swarrow$ Y $h(Z)$

$$f(g(X), Y) \xrightarrow{X/g(X)} f(g(g(X)), Y)$$

$$g(g(g(\dots g(X) \dots))$$

d) $f(a, b, X, g(Y, d))$ $\sigma = \{Z/a, X/b, Y/h(a), W/d\}$

$f(Z, X, b, g(h(a), W))$



diff ($x^2 + x^3 + x^4, x, A$).

Übung 5
Aufgabe 7e)

FOLP 01.12.

$$\begin{aligned} & \text{diff}(F+G, X, DF+DG) \\ & :- \text{diff}(F, X, DF), \\ & \quad \text{diff}(G, X, DG) \end{aligned}$$

$$\sigma = \{ F/x^2 + x^3, G/x^4, X/x, \underline{A/DF+DG} \}$$

diff ($x^2 + x^3, x, DF$), diff (x^4, x, DG).

$$\begin{aligned} & \text{diff}(F'+G', X', DF'+DG') \\ & :- \text{diff}(F', X', DF'), \\ & \quad \text{diff}(G', X', DG') \end{aligned}$$

$$\sigma = \{ F'/x^2, G'/x^3, X'/x, \underline{DF/DF'+DG'} \}$$

diff (x^2, x, DF'), diff (x^3, x, DG'), diff (x^4, x, DG)

$$\text{diff}(X^2, X, 2 \cdot x)$$

$$\sigma = \{ X/x^2, \underline{DF'/2x} \}$$

$\emptyset$, diff (x^3, x, DG'), diff (x^4, x, DG)

$$\begin{aligned} & \text{diff}(X^1 N, X, N \cdot X^{N \text{ minus } 1}) :- \\ & \quad N > 2, N \text{ minus } 1 \text{ is } N-1 \end{aligned}$$

$$\sigma = \{ X/x, N/3, N \text{ minus } 1/2, \underline{DG'/3 \cdot x^2} \}$$

$\emptyset$, $3 > 2$, 2 is 2, diff (x^4, x, DG)

(wie oben)

$$\sigma = \{ X/x, N/4, N \text{ minus } 1/3, \underline{DG/4 \cdot x^3} \}$$

$\emptyset \checkmark$

$$\text{Final: } \sigma = \{ DG/4x^3, DG'/3x^2, DF'/2x, \\ DF/2x + 3x^2, A/2x + 3x^2 + 4x^3 \}$$