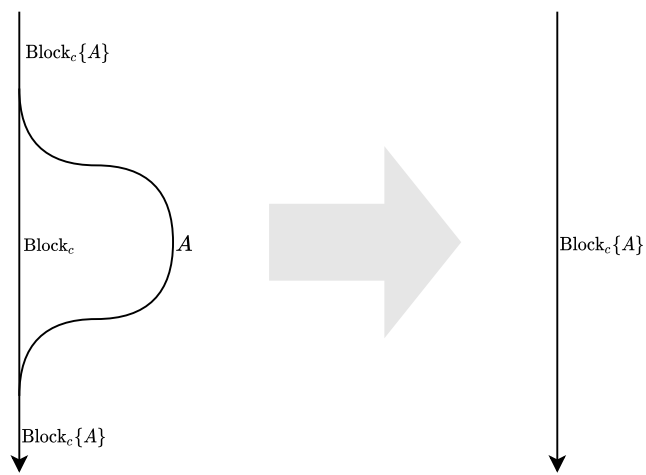
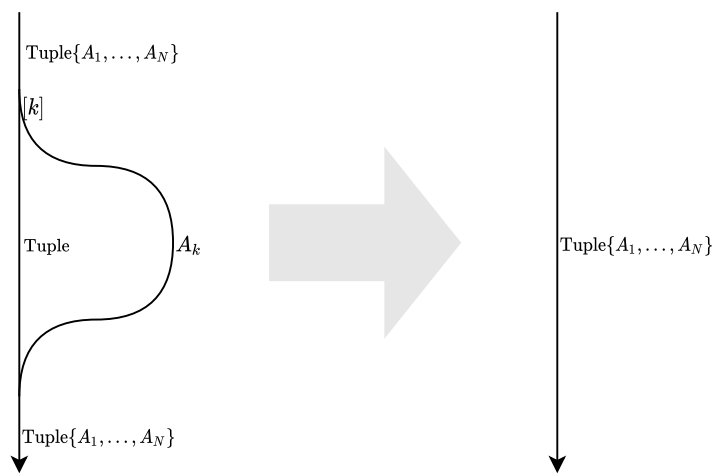


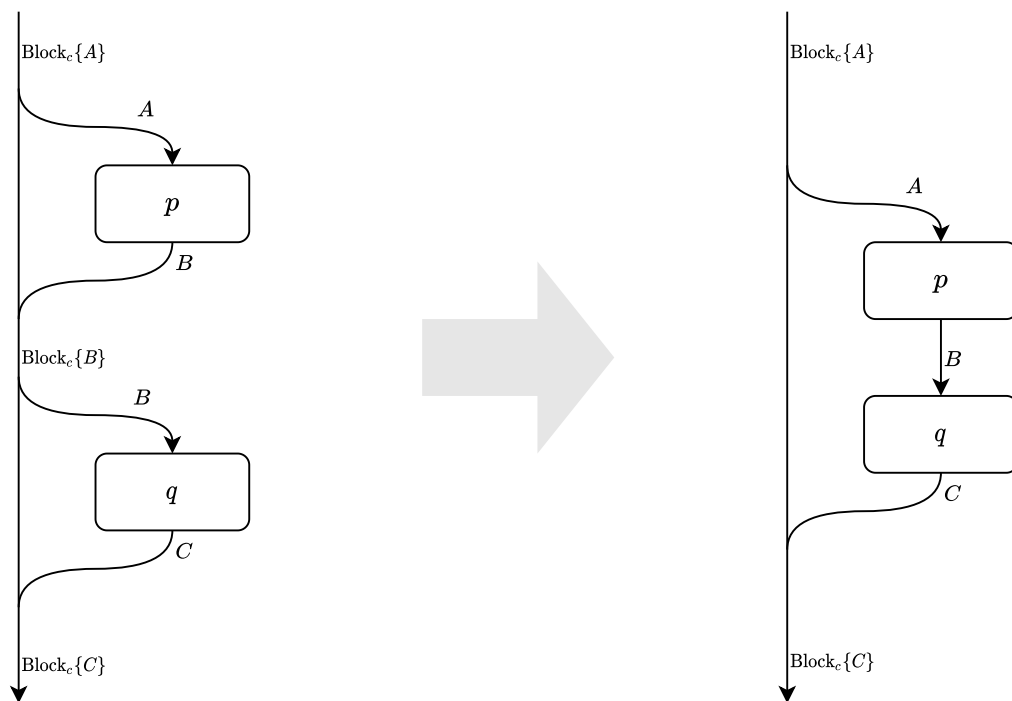
`with_elements(pass()) ⇒ pass()`



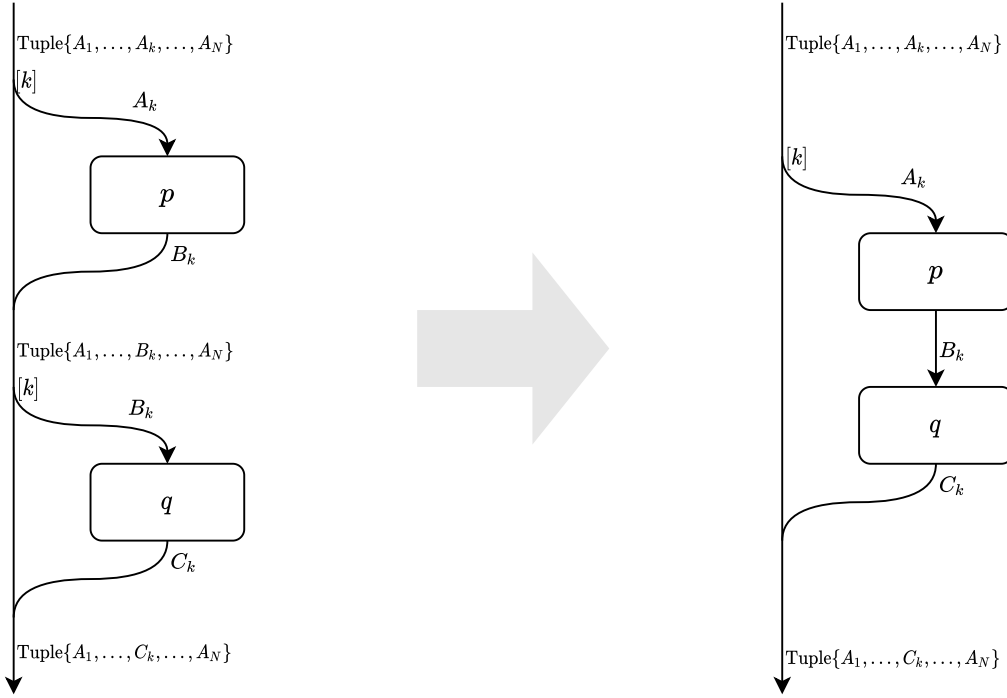
`with_column(k, pass()) ⇒ pass()`



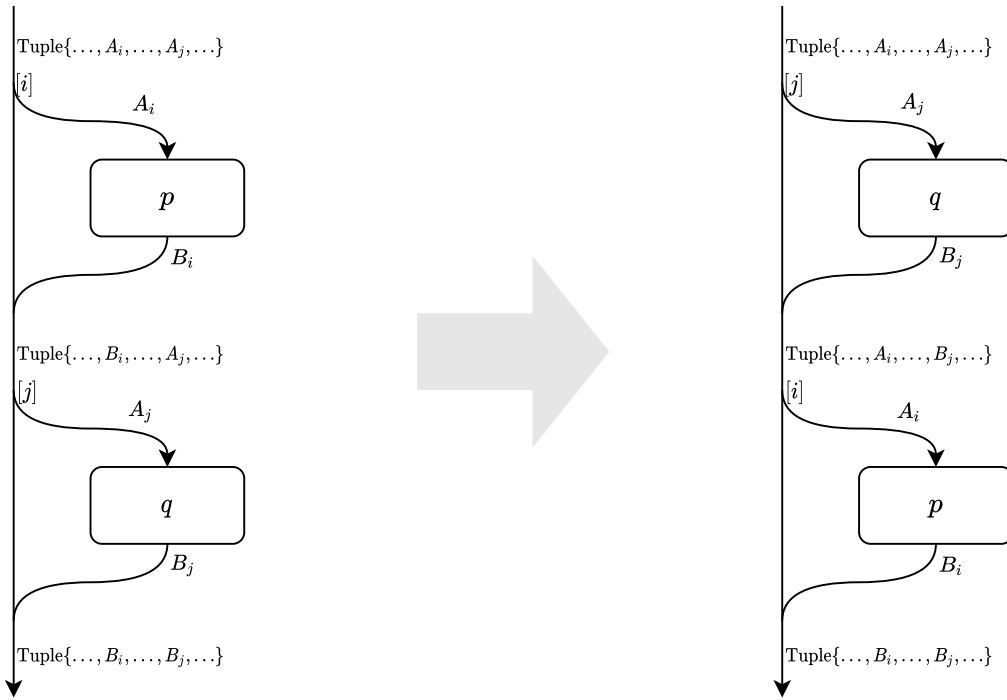
$\text{chain_of}(\text{with_elements}(p), \text{with_elements}(q)) \Rightarrow \text{with_elements}(\text{chain_of}(p, q))$



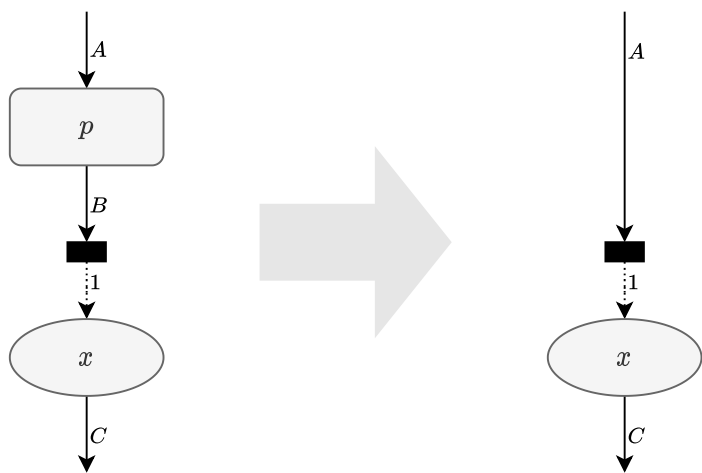
$$\text{chain_of}(\text{with_column}(k, p), \text{with_column}(k, q)) \Rightarrow \text{with_column}(k, \text{chain_of}(p, q))$$



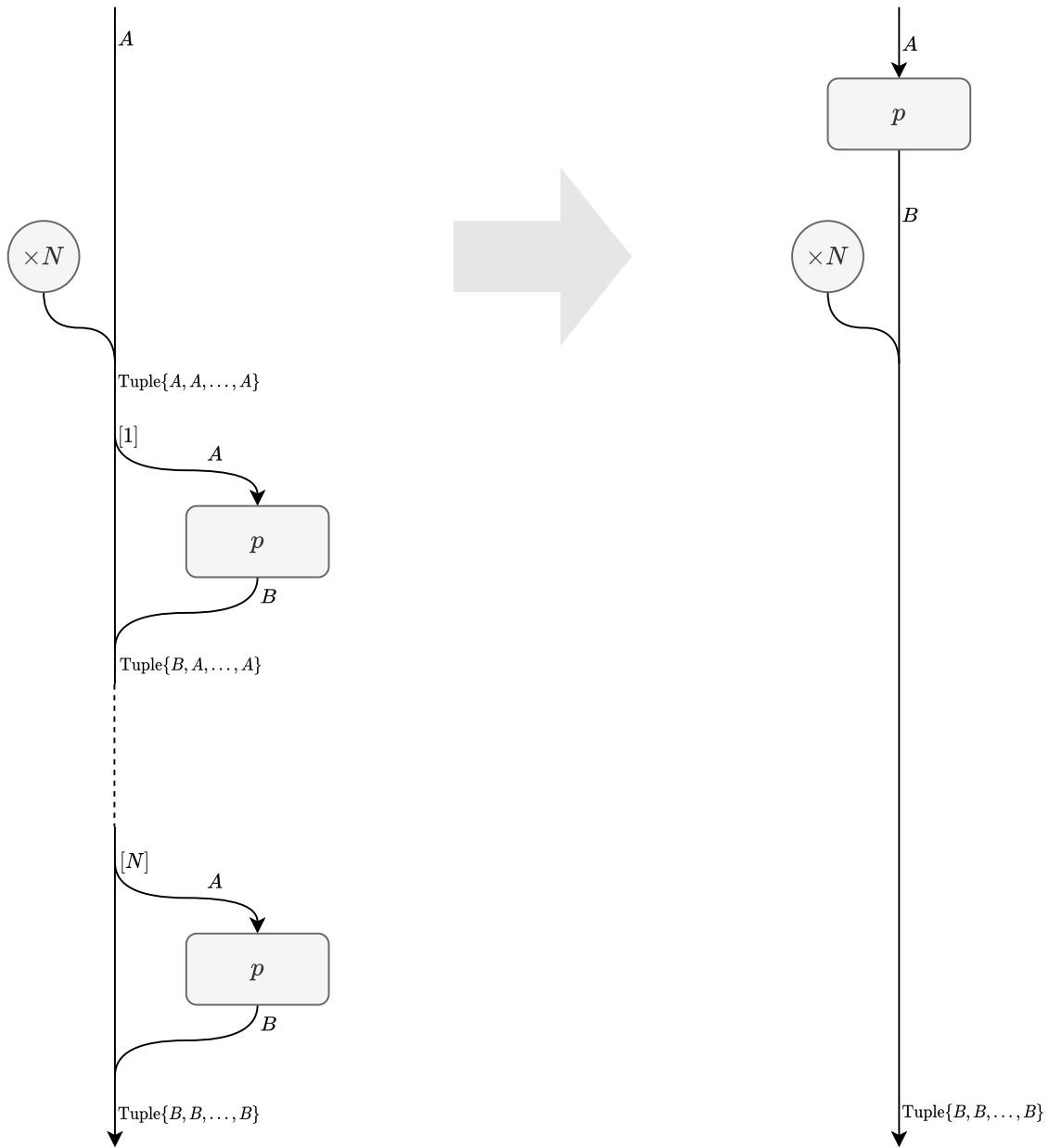
$$\text{chain_of}(\text{with_column}(i, p), \text{with_column}(j, q)) \Rightarrow \text{chain_of}(\text{with_column}(j, q), \text{with_column}(i, p)) \quad i \neq j$$



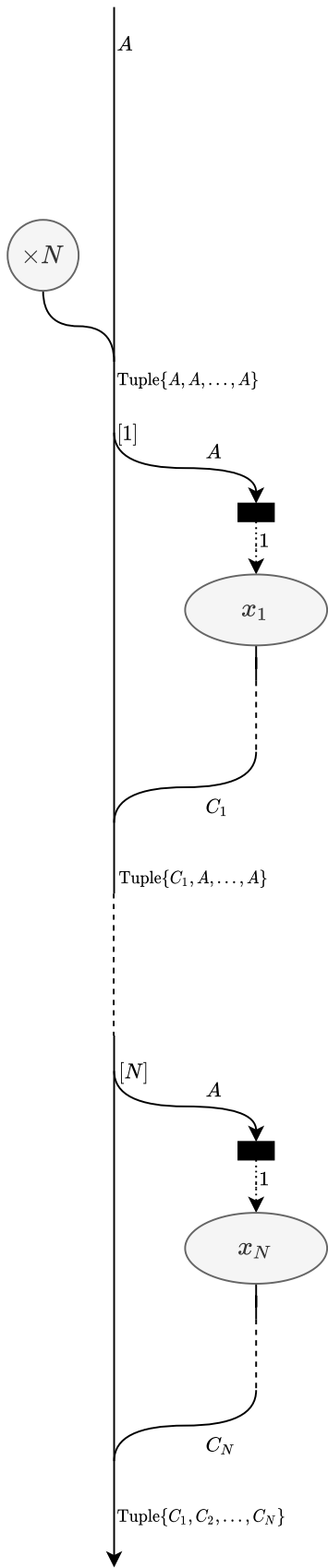
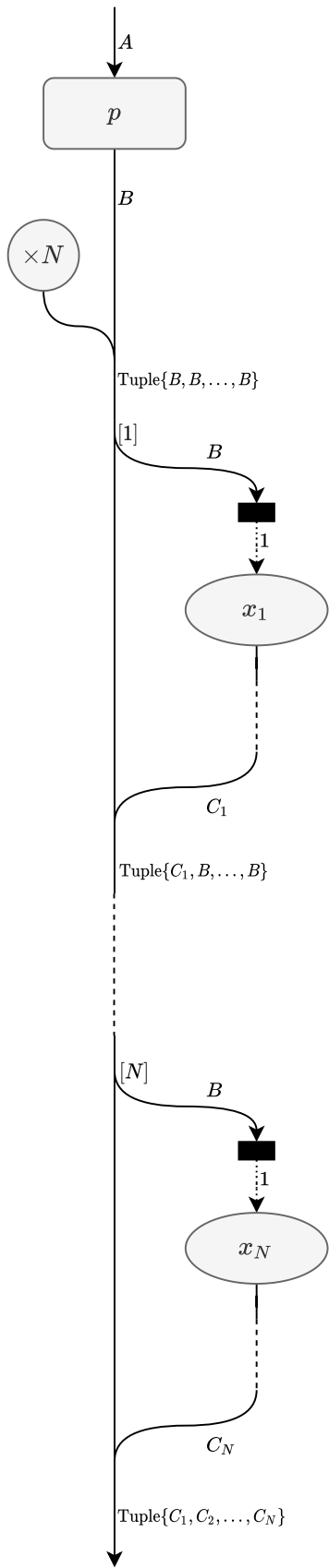
$$\text{chain_of}(p, \text{filler}(x)) \Rightarrow \text{filler}(x)$$



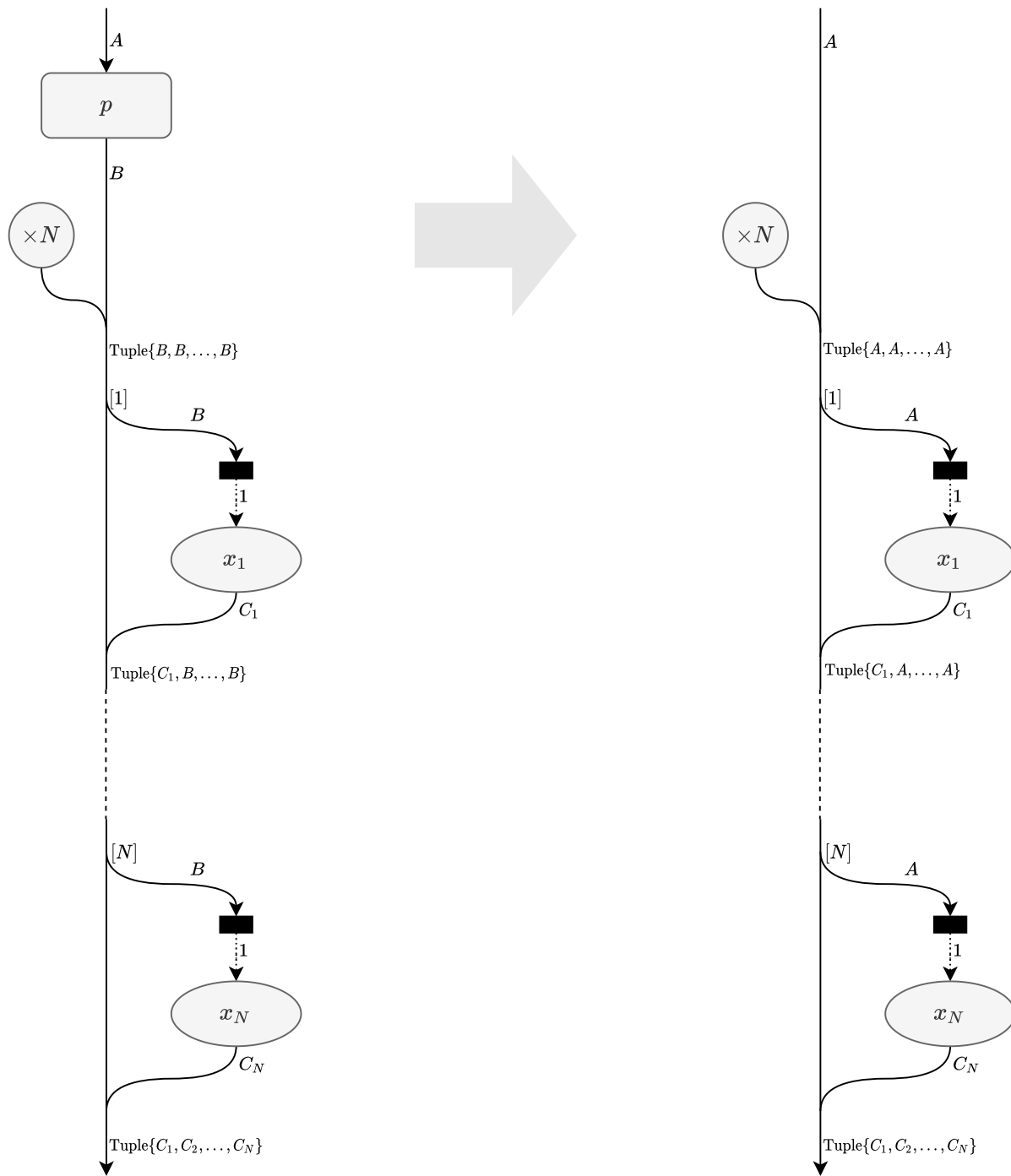
$\text{tuple_of}(p, \dots, p) \Rightarrow \text{chain_of}(p, \text{tuple_of}(\text{pass}(), \dots, \text{pass}()))$



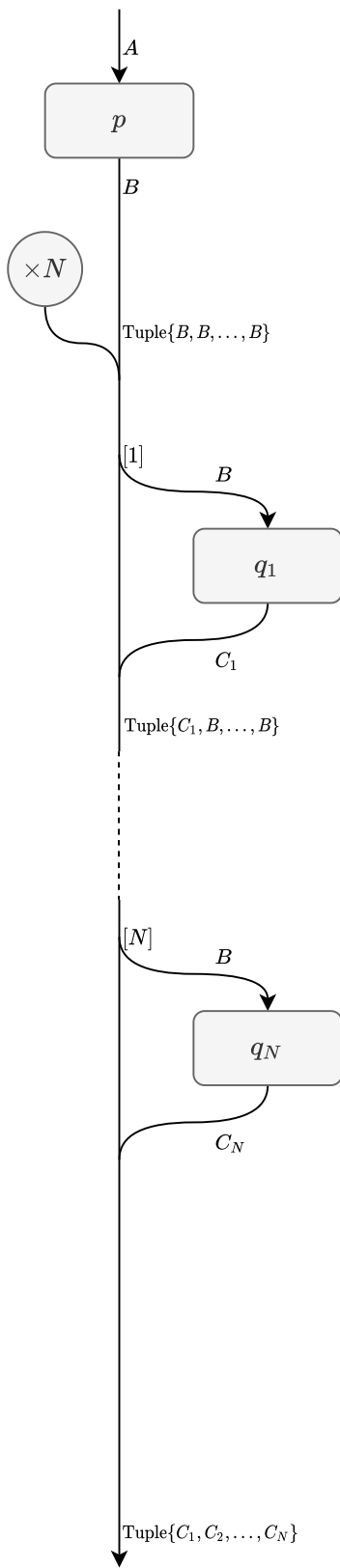
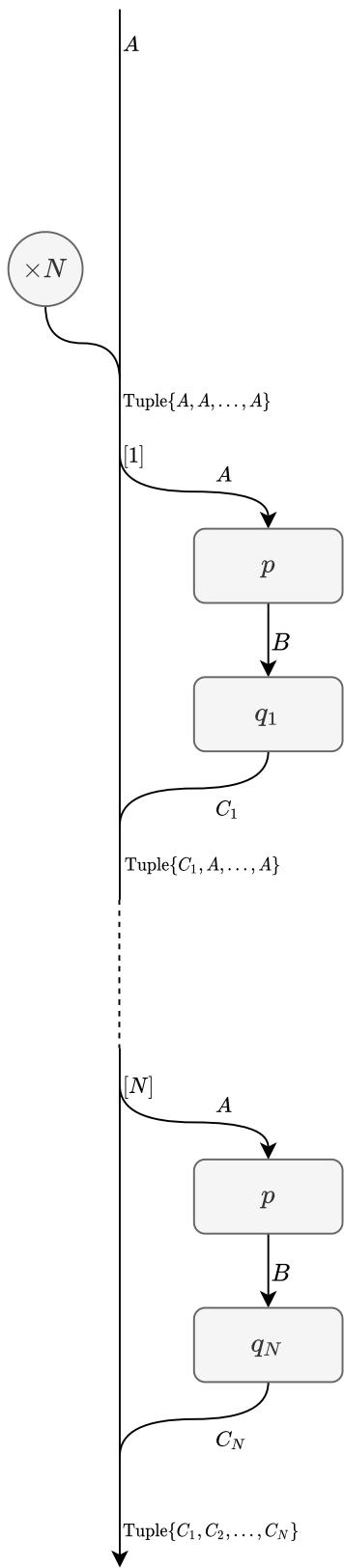
$\text{chain_of}(p, \text{tuple_of}(\text{chain_of}(\text{filler}(x_1), \dots), \dots, \text{chain_of}(\text{filler}(x_N), \dots)))) \Rightarrow \text{tuple_of}(\dots)$



$$\text{chain_of}(p, \text{tuple_of}(\text{filler}(x_1), \dots, \text{filler}(x_N))) \Rightarrow \text{tuple_of}(\text{filler}(x_1), \dots, \text{filler}(x_N))$$



$$\text{tuple_of}(\text{chain_of}(p, q_1), \dots, \text{chain_of}(p, q_N)) \Rightarrow \text{chain_of}(p, \text{tuple_of}(q_1, \dots, q_N))$$



$$\text{chain_of}(\text{tuple_of}(p_1, \dots, p_N), \text{column}(k)) \Rightarrow p_k$$

