function BACK-CHAIN(*KB, q*) **returns** a set of substitutions

BACK-CHAIN-LIST(*KB*, [*q*], {})

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function BACK-CHAIN-LIST(*KB, qlist, θ*) **returns** a set of substitutions
inputs: *KB*, a knowledge base
qlist, a list of conjuncts forming a query (θ already applied)
θ, the current substitution
static: *answers*, a set of substitutions, initially empty

if *qlist* is empty **then return** $\{\theta\}$
$q \leftarrow$ FIRST(*qlist*)
for each q_i' **in** *KB* such that $\theta_i \leftarrow$ UNIFY(q, q_i') succeeds **do**
Add COMPOSE(θ, θ_i) to *answers*
end
for each sentence $(p_1 \wedge \ldots \wedge p_n \Rightarrow q_i')$ **in** *KB* such that $\theta_i \leftarrow$ UNIFY(q, q_i') succeeds **do**
answers $\leftarrow$ BACK-CHAIN-LIST(*KB*, SUBST$(\theta_i, [p_1 \ldots p_n])$, COMPOSE$(\theta, \theta_i)) \cup$ *answers*
end
return the union of BACK-CHAIN-LIST(*KB*, REST(*qlist*), θ) for each $\theta \in$ *answers*