

Unifications and resolutions in Prolog. Which of the following pairs of terms can be unified (matched) together? Where relevant, give the variable instantiations that lead to successful unification.

$\text{healthyFood}(X) = \text{healthyFood}(\text{bread})$

$\text{healthyFood}(\text{bread}, X) = \text{healthyFood}(Y, \text{salad})$

It is unified and X is instantiated to salad and Y is instantiated to bread.

$\text{healthyFood}(\text{bread}, X, \text{milk}) = \text{healthyFood}(Y, \text{salad}, X)$

It is not unified

$\text{healthyFood}(X) = Y$

It is unified and Y is instantiated healthyfood(X).

$\text{meal}(\text{healthyFood}(\text{bread}), \text{drink}(\text{milk})) = \text{meal}(X, Y)$

It is unified, and X and Y instantiate to healthyFood(bread) and drink(milk) respectively

$\text{meal}(\text{healthyFood}(Z), \text{drink}(\text{milk})) = \text{meal}(X, Y)$

It is unified and X is instantiated to healthyfood(Z) and Y is instantiated to drink(milk).

$\text{meal}(\text{healthyFood}(\text{bread}), \text{drink}(\text{milk})) = \text{meal}(X, \text{drink}(\text{Water}))$

It is unified and X is instantiated to healthyfood(bread) and Water is instantiated to milk.

$\text{meal}(\text{healthyFood}(\text{bread}), Y) = \text{meal}(X, \text{drink}(\text{water}))$

It is unified and X is instantiated to healthyFood(bread) and Y is instantiated to drink(water).

$\text{breakfast}(\text{healthyFood}(\text{bread}), \text{egg}, \text{milk}) = \text{breakfast}(\text{healthyFood}(Y), Y, Z)$

It is not unified

dinner(X, Y, Time) = dinner(jack, cook(egg, oil), Evening)

It is unified and X is instantiated to jack and Y is instantiated to cook(egg,oil) and Time is instantiated to Evening and Evening .

k(s(g), Y) = k(X, t(k))

It is unified and X is instantiated to s(g) and Y is instantiated to t(k).