

v2/crypto.pro KB

```
% FILE: v2/crypto.pro
% TYPE: Prolog Source
% LINE: Crypto -- basic exhaustive solver for order 2 3 4 problems
% DATE: October 28, 2015
% -----
```

```
% load some files
:-consult('gv.pro').
:-consult('combosets.pro').
```

```
crypto(N1,N2,Goal,ex(N1,+,N2)) :- Goal is (N1 + N2).
crypto(N1,N2,Goal,ex(N1,*,N2)) :- Goal is (N1 * N2).
crypto(N1,N2,Goal,ex(N1,-,N2)) :- Goal is (N1 - N2).
crypto(N1,N2,Goal,ex(N2,-,N1)) :- Goal is (N2 - N1).
crypto(N1,N2,Goal,ex(N1/,N2)) :- N2 > 0, Goal is (N1 / N2).
crypto(N1,N2,Goal,ex(N2/,N1)) :- N1 > 0, Goal is (N2 / N1).
```

```
crypto(N1,N2,N3,G,Expr) :-
  combos(set(N1,N2,N3),
  combo(A,B),extras(C)),
  crypto(A,B,SG,SGE),
  crypto(C,SG,G,UGE),
  substitute(SGE,SG,UGE,Expr).
```

```
crypto(N1,N2,N3,N4,G,Expr) :-
  combos(set(N1,N2,N3,N4),
  combo(A,B),extras(C,D)),
  crypto(A,B,SG,SGE),
  crypto(C,D,SG,G,UGE),
  substitute(SGE,SG,UGE,Expr).
```

```
substitute(New,Old,ex(Old,O,Z),ex(New,O,Z)).
substitute(New,Old,ex(X,O,Old),ex(X,O,New)).
substitute(New,Old,ex(X,O,Z),ex(Q,O,Z)) :-
  substitute(New,Old,X,Q).
substitute(New,Old,ex(X,O,Z),ex(X,O,Q)) :-
```

substitute(New,Old,Z,Q).