

perm(s(A,B), p(A,B)).

perm(s(A,B), p(B,A)).

perm(s(A,B,C), p(A,X,Y)) :- perm(s(B,C),p(X,Y)).

perm(s(A,B,C), p(B,X,Y)) :- perm(s(A,C),p(X,Y)).

perm(s(A,B,C), p(C,X,Y)) :- perm(s(A,B),p(X,Y)).

perm(s(A,B,C,D), p(A,X,Y,Z)) :- perm(s(B,C,D),p(X,Y,Z)).

perm(s(A,B,C,D), p(B,X,Y,Z)) :- perm(s(A,C,D),p(X,Y,Z)).

perm(s(A,B,C,D), p(C,X,Y,Z)) :- perm(s(A,B,D),p(X,Y,Z)).

perm(s(A,B,C,D), p(D,X,Y,Z)) :- perm(s(A,B,C),p(X,Y,Z)).

perm(s(A,B,C,D,E), p(A,X,Y,Z,W)) :- perm(s(B,C,D,E),p(X,Y,Z,W)).

perm(s(A,B,C,D,E), p(B,X,Y,Z,W)) :- perm(s(A,C,D,E),p(X,Y,Z,W)).

perm(s(A,B,C,D,E), p(C,X,Y,Z,W)) :- perm(s(B,A,D,E),p(X,Y,Z,W)).

perm(s(A,B,C,D,E), p(D,X,Y,Z,W)) :- perm(s(B,C,A,E),p(X,Y,Z,W)).

perm(s(A,B,C,D,E), p(E,X,Y,Z,W)) :- perm(s(B,C,D,A),p(X,Y,Z,W)).

permutations(A,B) :-

perm(s(A,B), p(V,W)),

write(V), write(W), write(' '),

fail.

permutations(A,B,C) :-

perm(s(A,B,C), p(V,W,X)),

write(V), write(W), write(X), write(' '),

fail.

permutations(A,B,C,D) :-

```
perm(s(A,B,C,D), p(V,W,X,Y)),
write(V), write(W), write(X), write(Y), write(' '),
fail.
```

permutations(A,B,C,D,E) :-

```
perm(s(A,B,C,D,E), p(V,W,X,Y,Z)),
write(V), write(W), write(X), write(Y), write(Z), write(' '),
fail.
```

```
combos(set(N1,N2,N3), combo(N1,N2), extras(N3)).
combos(set(N1,N2,N3), combo(N2,N3), extras(N1)).
combos(set(N1,N2,N3), combo(N1,N3), extras(N2)).
```

```
combos(set(N1,N2,N3,N4), combo(N1,N2), extras(N3,N4)).
combos(set(N1,N2,N3,N4), combo(N1,N3), extras(N2,N4)).
combos(set(N1,N2,N3,N4), combo(N1,N4), extras(N2,N3)).
combos(set(N1,N2,N3,N4), combo(N2,N3), extras(N1,N4)).
combos(set(N1,N2,N3,N4), combo(N2,N4), extras(N1,N3)).
combos(set(N1,N2,N3,N4), combo(N3,N4), extras(N1,N2)).
```

```
combos(set(N1,N2,N3,N4,N5), combo(N1,N2), extras(N3,N4,N5)).
combos(set(N1,N2,N3,N4,N5), combo(N1,N3), extras(N2,N4,N5)).
combos(set(N1,N2,N3,N4,N5), combo(N1,N4), extras(N2,N3,N5)).
combos(set(N1,N2,N3,N4,N5), combo(N1,N5), extras(N2,N3,N4)).
combos(set(N1,N2,N3,N4,N5), combo(N2,N3), extras(N1,N4,N5)).
combos(set(N1,N2,N3,N4,N5), combo(N2,N4), extras(N1,N3,N5)).
combos(set(N1,N2,N3,N4,N5), combo(N2,N5), extras(N1,N3,N4)).
combos(set(N1,N2,N3,N4,N5), combo(N3,N4), extras(N1,N2,N5)).
combos(set(N1,N2,N3,N4,N5), combo(N3,N5), extras(N1,N2,N4)).
```

`combos(set(N1,N2,N3,N4,N5), combo(N4,N5), extras(N1,N2,N3)).`