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\* Darius Hooks

\* Project 4

\* COMP 333

\* 12/8/16

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maxList([],N):- N is -1.

maxList([H|T],N):- maxList(T,M), N is max(H,M).

listRef(L,N):- length(L,X), N < X.

listRef([H|\_],1,R):- R = H.

listRef([\_|T],N,R):- listRef(T,N1,R), N is N1 + 1.

removeDups([]).

removeDups([H|T]):- not(member(H,T)), removeDups(T).

removeDups([H|T],X):- not(member(H,T)), H1 = [H], append(T,H1,X), removeDups(X).

removeDups([H|T],X):- member(H,T), selectchk(H,T,R), H1 = [H], append(R,H1,R1), removeDups(R1,X).

challenger(A1,A2,A3,A4,A5,A6,A7,A8,A9,A10, X1,X2,X3,X4,X5,X6,X7,X8,X9,X10,X11,X12,X13,X14,X15,X16):-

between(1,9,X1),between(1,9,X2),between(1,9,X3),between(1,9,X4),A2=:=X1+X2+X3+X4,

between(1,9,X5),between(1,9,X6),between(1,9,X7),between(1,9,X8),A3=:=X5+X6+X7+X8,

between(1,9,X9),between(1,9,X10),between(1,9,X11),between(1,9,X12),A4=:=X9+X10+X11+X12,

between(1,9,X13),between(1,9,X14),between(1,9,X15),between(1,9,X16),A5=:=X13+X14+X15+X16,

between(1,9,X1),between(1,9,X5),between(1,9,X9),between(1,9,X13),A10=:=X1+X5+X9+X13,

between(1,9,X2),between(1,9,X6),between(1,9,X10),between(1,9,X14),A9=:=X2+X6+X10+X14,

between(1,9,X3),between(1,9,X7),between(1,9,X11),between(1,9,X15),A8=:=X3+X7+X11+X15,

between(1,9,X4),between(1,9,X8),between(1,9,X12),between(1,9,X16),A7=:=X4+X8+X12+X16,

between(1,9,X1),between(1,9,X6),between(1,9,X11),between(1,9,X16),A6=:=X1+X6+X11+X16,

between(1,9,X13),between(1,9,X10),between(1,9,X7),between(1,9,X4),A1=:=X13+X10+X7+X4.