

```
c_d\succ_d==
LET NumberPreferring(a,b)==
(*****
*)The number of voters who prefer candidate 'a' to candidate 'b'.*)
(*****
*)Cardinality({v in 1..V: RankBy(a,v) < RankBy(b,v)})
IN NumberPreferring(c,d) > NumberPreferring(d,c)

CondorcetRanking==
LET IsDominatingSet(D,C)==
(*****
*)True iff D is a dominating set in the election for the set C of*)
*)candidates.*****
*)/D#{
)/\A_d in D: \A_e in C \ D: d\succ_e

CWinners(C)==
(*****
*)The set of Condorcet winners in the election for the set C of*)
*)candidates.*****
*)CHOOSE D in SUBSET C:
)/\ IsDominatingSet(D,C)
)/\ \A_e in SUBSET C: \ IsDominatingSet(E,C) => (D \ subseq E)

RECURSIVE CRanking(_)
CRanking(C) == IF C = {} THEN <<>
ELSE LET CW == CWinners(C)
IN <<CW>> \ o CRanking(C \ CW)

IN CRanking(Cand)

(*****
*)In this definition of CondorcetRanking, the LET definition of*)
*)IsDominatingSet(D,C) uses the 'dominates' relation \succ that is*)
*)defined in terms of the votes in the election for all candidates,*)
*)rather than the votes in an election only for candidates in C. Explain*)
*)why this doesn't matter.*****
*)*****
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