

## If There is a Condorcet Winner, Is it Desirable that He/She Win? (2019)

Prepared by:

Joseph Malkevitch  
Department of Mathematics  
York College (CUNY)  
Jamaica, New York 11451

email:

[malkevitch@york.cuny.edu](mailto:malkevitch@york.cuny.edu)

web page:

<http://york.cuny.edu/~malk>

The following example (101 voters, 9 candidates) was produced by Warren Smith based on an idea due to Peter Fishburn.  $U > V$  means candidate  $U$  is preferred to candidate  $V$ . For example 72 voters prefer  $G$  to  $E$  while 29 voters prefer  $E$  to  $G$ . Note  $X$  is the Condorcet winner but gets no first place votes and  $Y$  seems to be much more preferred to all other candidates than  $X$  despite the fact that  $X$  does beat  $Y$  by one vote. ***Do you think  $Y$  should win this election?***

Vote count:	Preference schedules
19	$Y > A > B > C > D > E > F > G > X$
31	$Y > A > B > C > D > X > F > G > E$
10	$E > X > Y > G > F > D > C > B > A$
10	$F > X > Y > G > E > D > C > B > A$
10	$G > X > Y > E > F > D > C > B > A$
21	$G > F > E > X > Y > D > C > B > A$

Pairwise preferences matrix:

	A	B	C	D	E	F	G	X	Y
A	*	50	50	50	50	50	50	50	0
B	51	*	50	50	50	50	50	50	0
C	51	51	*	50	50	50	50	50	0
D	51	51	51	*	50	50	50	50	0
E	51	51	51	51	*	39	29	50	31
F	51	51	51	51	62	*	60	50	31
G	51	51	51	51	72	41	*	50	31
X	51	51	51	51	51	51	51	*	51
Y	101	101	101	101	70	70	70	50	*