

2000 High School Mathematical Contest in Modeling (HiMCM)

Problem B: Elections

It is almost election time and it is time to revisit the electoral vote process. The constitution and its amendments have provided a subjective method for awarding electoral votes to states. Additionally, a state popular vote, no matter how close, awards all electoral votes to the winner of that plurality. Create a mathematical model that is different than the current electoral system. Your model might award fractional amounts of electoral votes or change the methods by which the number of electoral votes are awarded to the states. Carefully describe your model and test its application with the data from the 1992 election (see data set reverse site). Justify why your model is better than the current model?

1992 Election Summary

State	Electoral Vote			Popular Vote		
	Clinton	Bush	Perot	Clinton	Bush	Perot
AL	0	9	0	668146	797477	180209
AK	0	3	0	57264	73683	50034
AZ	0	8	0	521736	543876	339307
AR	6	0	0	495150	331867	97549
CA	54	0	0	4812317	3338942	2144856
CO	8	0	0	625402	557408	362506
CT	8	0	0	681081	574738	348028
DE	3	0	0	125997	102436	59061
DC	3	0	0	186301	19813	9284
FL	0	25	0	2051205	2131263	1040953
GA	13	0	0	1002433	985682	306489
HI	4	0	0	178893	136430	52863
ID	0	4	0	136249	201787	129897
IL	22	0	0	2378873	1717736	832307
IN	0	12	0	839227	978627	451858
IA	7	0	0	583937	503338	251040
KS	0	6	0	386168	443314	312670
KY	8	0	0	661059	617419	203587
LA	9	0	0	815305	729880	210604
ME	4	0	0	261859	207122	205076
MD	10	0	0	941979	671609	271198
MA	12	0	0	1315016	803974	630440
MI	18	0	0	1854603	1585251	819931
MN	10	0	0	994843	734845	549517
MS	0	7	0	391911	478878	83950
MO	11	0	0	1051328	810058	517918
MT	3	0	0	153899	143702	106735
NE	0	5	0	214106	338646	171938
NV	4	0	0	185401	171378	129532
NH	4	0	0	207264	199623	120029
NJ	15	0	0	1361088	1303686	504152
NM	5	0	0	255558	209467	90653
NY	33	0	0	3244562	2240050	1028607
NC	0	14	0	1103716	1122608	353845
ND	0	3	0	97546	133911	69805
OH	21	0	0	1964842	1876445	1024319
OK	0	8	0	473066	592929	319978
OR	7	0	0	524161	393273	307244
PA	23	0	0	2233810	1777372	895563
RI	4	0	0	198877	121864	94717
SC	0	8	0	475313	572031	137598
SD	0	3	0	124861	136671	73297
TN	11	0	0	933618	840897	199787
TX	0	32	0	2278912	2460201	1349644
UT	0	5	0	182590	320462	202578
VT	3	0	0	125803	85512	61510
VA	0	13	0	1033825	1146909	344840
WA	11	0	0	855710	609912	470239
WV	5	0	0	324009	236526	105652
WI	11	0	0	1035942	926245	542610
WY	0	3	0	67863	79558	51209
TOTALS	370	168	0	43682624	38117331	19217213