



**BALL STATE
UNIVERSITY**

**Institute for the Study
of Political Economy**

The Features and Bugs of Democracy

*Voting and
Deliberation*

Nathanael Snow
JET SET2026
July 30, 2026

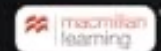


Modern Principles:
MACROECONOMICS

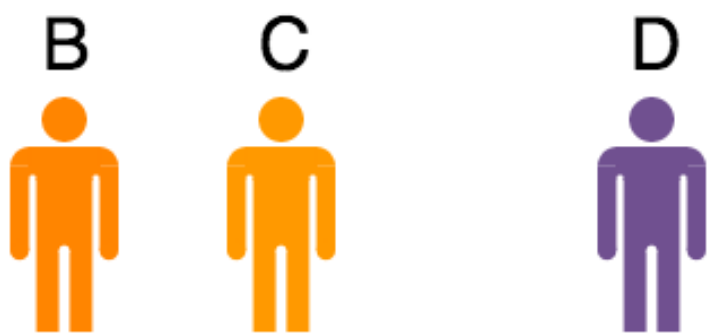
Sixth Edition



Tyler Cowen • Alex Tabarrok



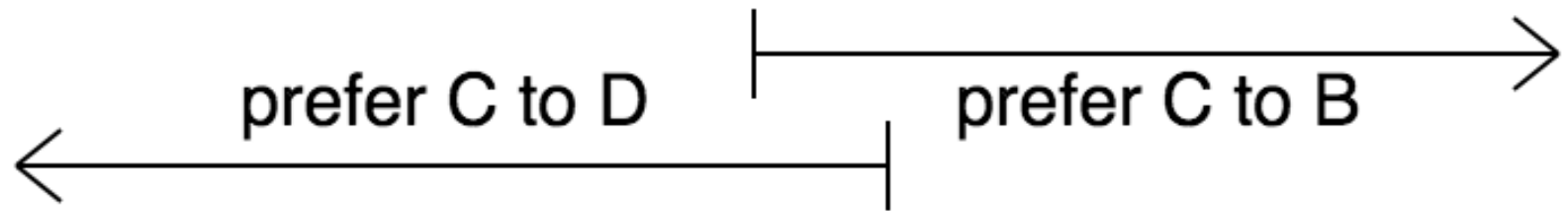
candidates



voters



M



Your vote:

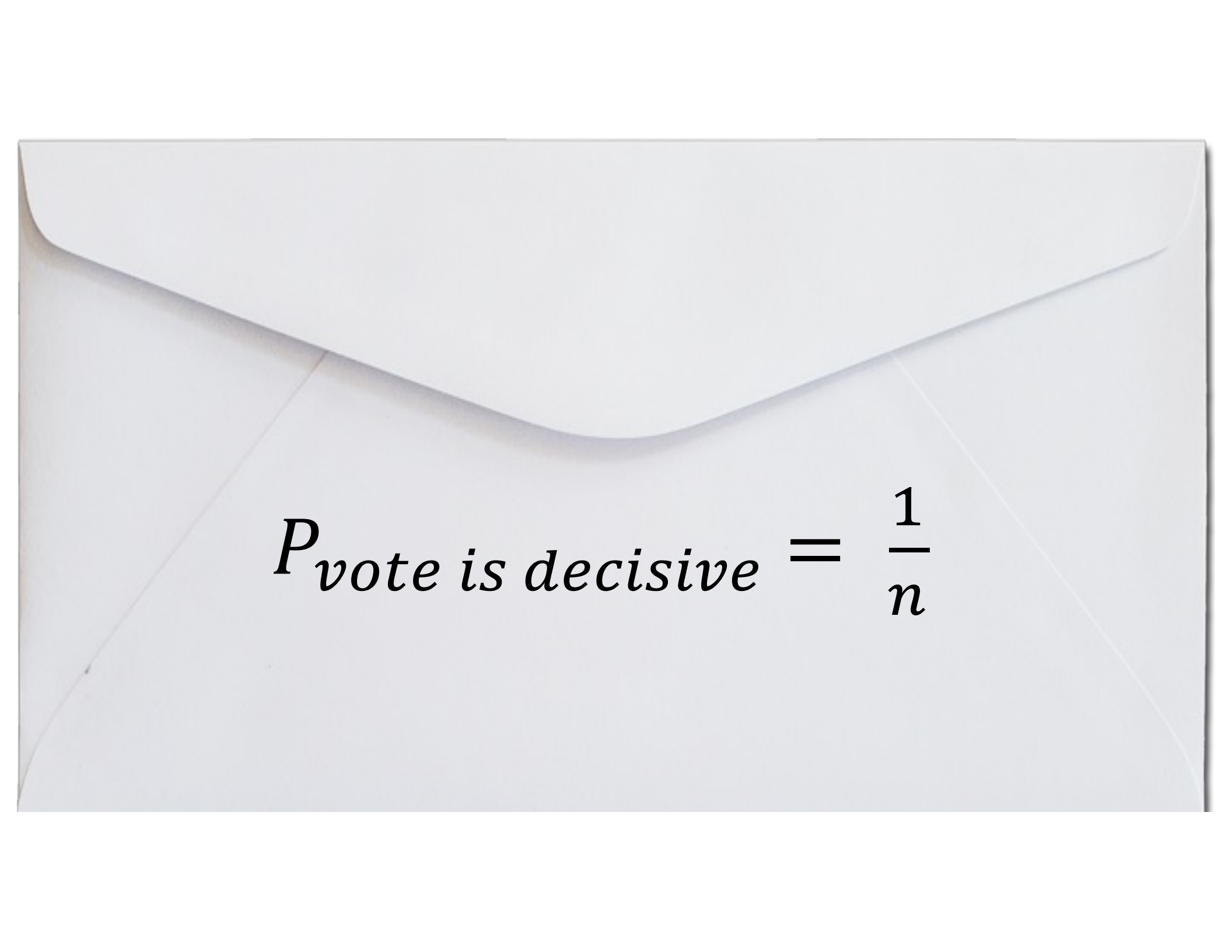
$$P_{tie} = \pi \frac{1}{\sqrt{\pi n}} (4p - 4p^2)^n$$

$$P_{vote \text{ is decisive}} = \frac{2e^{-2(N-1)(p-\frac{1}{2})^2}}{\sqrt{2\pi(N-1)}}$$







A white envelope with a triangular flap is shown. The text $P_{vote \text{ is decisive}} = \frac{1}{n}$ is written in a black, italicized serif font on the front of the envelope.
$$P_{vote \text{ is decisive}} = \frac{1}{n}$$

- Ballot in your voting district.
- Every line on the ballot.
- How many people voted in each race?

- Calculate $p(\text{your vote decisive})$ for each election.
- If your preferred candidate won, you will be made better off by \$100 for each.

- Op cost = \$1 to vote in each.
- For which elections was $e(\text{benefit}) > e(\text{cost})$?

- $E(\text{instrumental value}) - \text{cost} = \text{expressive value}$

2020 GENERAL ELECTION SAMPLE BALLOT

November 3, 2020

PRESIDENT & VICE PRESIDENT OF THE UNITED STATES

Vote for 1 only

TRUMP, Donald J.

Republican

and

PENCE, MICHAEL R.

Biden, Joseph R.

Democrat

and

HARRIS, Kamala

JORGENSEN, Jo

Libertarian

and

COEN, Jeremy (Spike)

GOVERNOR & LIEUTENANT GOVERNOR

Vote for 1 only

HOLCOMB, Eric

Republican

and

CROUCH, Suzanne

Myers, Woodrow (Woody)

Democratic

And

LAWSON, Linda

Rainwater II, Donald G.

And

William E. Henry

Libertarian

ATTORNEY GENERAL

Vote for 1 only

Rokita, Todd

Republican

Weinzapfel, Jonathan

Democratic

UNITED STATES REPRESENTATIVE DIST. 6

Vote for 1 only

Pence, Greg

Republican

Lake, Jeannine Lee

Democratic

Ferkinhoff, Tom

Libertarian

STATE REPRESENTATIVE DIST. 31

Vote for 1 only

Vermilion, Ann

Republican

STATE REPRESENTATIVE DIST. 32**Vote for 1 only**

COOK, Anthony J. (Tony)

Republican

Neiling, Amie

Democratic

STATE REPRESENTATIVE DIST. 33**Vote for 1 only**

Prescott, John (J.D.)

Republican

Snider, Julie

Democratic

STATE REPRESENTATIVE DIST. 34**Vote for 1 only**

Basham, Dale

Republican

ERRINGTON, Sue E.

Democratic

STATE REPRESENTATIVE DIST. 35**Vote for 1 only**

Rowray, Elizabeth

Republican

WRIGHT, Melanie M.

Democratic

JUDGE OF THE CIRCUIT COURT #3 (46th Circuit)

Vote for 1 only

NO CANDIDATE FILED

Republican

Wolf, Linda Ralu

Democratic

JUDGE OF THE CIRCUIT COURT #4 (46th Circuit)

Vote for 1 only

Feick, John M.

Republican

NO CANDIDATE FILED

Democratic

JUDGE OF THE CIRCUIT COURT #5 (46th Circuit)

NO CANDIDATE FILED

Republican

Cannon, Thomas A. Jr.

Democratic

COUNTY TREASURER

Vote for 1 only

CARROLL, Ed

Republican

NO CANDIDATE FILED

Democratic

COUNTY SURVEYOR

Vote for 1 only

BORCHERS, Tom

Republican

COUNTY COMMISSIONER DISTRICT # 1**Vote for 1 only**

KING, James

Republican

CAMPBELL, Gary

Democratic

COUNTY COMMISSIONER DISTRICT # 2**Vote for 1 only**

RIGGIN, Sherry K.

Republican

Donati, Todd R.

Democratic

COUNTY COUNCIL AT-LARGE

Vote for 3 only

Vote for not more than 3 candidates(s) for this office. To vote for any candidate for this office, you must make a voting mark for each candidate you wish to vote for. A straight party vote will not count as a vote for any candidate for this office.

ALEXANDER, Scott A.

Republican

PIPER, Jessica

Republican

WEBB, Ryan S.

Republican

BLEDSON, Larry W. Jr.

Democratic

DOWLING, Ralph E.

Democratic

HURWITZ, Ari

Democratic

YORKTOWN COUNCIL DISTRICT # 2**Vote for 1 only**

SEARS PERRY, Nanci

Republican

NO CANDIDATE FILED

Democratic

YORKTOWN COUNCIL DISTRICT # 3**Vote for 1 only**

GLAUB, Rick E.

Republican

NO CANDIDATE FILED

Democratic

YORKTOWN COUNCIL DISTRICT # 5**Vote for 1 only**

GUINN, Marta

Republican

NO CANDIDATE FILED

Democratic

SCHOOL BOARD

COWAN COMMUNITY SB

Vote for 2 only

(Pcts. 59 & 73)

CONWAY, Vick A.
12601 S. Co. Rd. 200 W.

N/P
Muncie, IN 47302

JONES, Charles R.
608 W. Co. Rd. 600 S.

N/P
Muncie, IN 47302

DALEVILLE COMMUNITY SB

(Pcts. 51, 52, & 94)

Vote for 3 only

CORN, Kip A.

7220 W. Co. Rd. 600 S.

N/P

Daleville, IN 47334

KAELIN, Joseph T.

7101 S. Co. Rd. 400 W.

N/P

Muncie, IN 47302

REES, Vickie

4401 S. Co. Rd. 750 W.

N/P

Daleville, IN 47334

DELAWARE COMMUNITY SB – At-Large

Vote for 1 only

(Pcts. 60, 61, 65, 66, 67, 68, 69, 70, 77, 90, 91, 92, 93)

ADAMS, John
5101 E. St. Rd. 28

N/P
Muncie, IN 47303

DELAWARE COMMUNITY SB – Hamilton Twp.

Vote for 1 only

(Pcts. 60, 61, 65, 66, 67, 68, 69, 70, 77, 90, 91, 92, 93)

WILLIAMS, Adam M.
10604 N. Faye Ave.

N/P
Muncie, IN 47303

LIBERTY-PERRY SB – Liberty Twp.

Vote for 1 only

(Pcts. 63, 64 & 75)

NEMYER, Kevin
12010 E. Orr Rd.

N/P
Albany, IN 47320

WES-DEL COMMUNITY SB – Harrison Twp.

Vote for 1 only

(Pcts. 56, 58, & 78)

SCHNEIDER, James C.
12001 N. Co. Rd. 825 W.

N/P
Gaston, IN 47342

ROOKER, Gary E.
4901 W. Connie Dr.

N/P
Muncie, IN 47304

WES-DEL COMMUNITY SB – Washington Twp.

Vote for 1 only

(Pcts. 57)

DOWLING, Steven E.
14720 N. Co. Rd. 500 W.

N/P
Gaston, IN 47342

This is HARD!!!

- Availability of Ballot
- Finding the Results
- Calculations
- Writeup

11/13/2020 - 7:28:39 PM

Election Date: 11/3/2020

Precinct Summary Report



Delaware County, Indiana

2020 General Election

INDELG20

11/3/2020

E - # Of Election Day	225
A - # Of Paper Absentee	110
W - # Of Walk-In Absentee	174

PRECINCT STATUS: REPORTED

PUBLIC COUNT:	509
VOTER TURNOUT:	72.20%
REGISTERED	705

03-PRECINCT 03

----- VOTES -----

E	A	W	TOTAL	%	
VOTE FOR 1					
VOTES=501					President and VP of the US
139	34	69	242	48.30%	(R) Trump \ Pence
76	73	101	250	49.90%	(D) Biden \ Harris
5	1	1	7	1.40%	(L) Jorgensen \ Cohen
2	0	0	2	0.40%	Write-In
VOTE FOR 1					
VOTES=494					Governor and Lt Governor
146	58	87	291	58.91%	(R) Holcomb \ Crouch
56	46	79	181	36.64%	(D) Myers \ Lawson
18	2	2	22	4.45%	(L) Rainwater II \ Henry
VOTE FOR 1					

					VOTE FOR 1
VOTES=501					President and VP of the US
139	34	85	242	48.30%	(R) Trump \ Pence
76	73	101	250	49.90%	(D) Biden \ Harris
5	1	1	7	1.40%	(L) Jorgensen \ Cohen
2	0	0	2	0.40%	Write-In
					VOTE FOR 1
VOTES=494					Governor and Lt Governor
146	58	87	291	58.91%	(R) Holcomb \ Crouch
56	46	79	181	36.64%	(D) Myers \ Lawson
18	2	2	22	4.45%	(L) Rainwater II \ Henry
					VOTE FOR 1

Election	Republican Candidate	Democratic Candidate	Libertarian Candidate	Write In	Total # of Voters	Probability my Vote is Decisive	Expected Benefit
President and Vice President	Trump/Pence	Biden/Harris	Jorgensen/Coen	Write In			
Votes to each	81282632	74223234	1864873	1031200	158401939	0.0000000063130540340	0.000000631305
Election	Republican Candidate	Democratic Candidate	Libertarian Candidate	Total # of Voters			
Govenor and Lieutenant Gov.	Holcomb/Crouch	Myers/Lawson	Rainwater II/Henry				
Votes to each	1706724	968092	345567	3020383		0.0000003310838393674	0.000033108384
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
Attourney General	Todd Rokita	Jonathan Weinzapfel					
Votes to each	1721995	1229624		2951619		0.0000003387971143972	0.000033879711
Election	Republican Candidate	Democratic Candidate	Libertarian Candidate	Total # of Voters			
US Representative Dist 6	Greg Pence	Jeannine Lee Lake	Tom Ferkinhoff				
Votes to each	225318	91103	11791	328212		0.0000030468112073904	0.000304681121
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
State Representative Dist 31	Ann Vermillion	No Candidate Filed					
Votes to each	19756			19756		0.0000506175339137477	0.005061753391
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
State Representative Dist 32	Anthony J. (Tony) Cook	Amie Neiling					
Votes to each	26430	8615		35045		0.0000285347410472250	0.002853474105
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
State Representative Dist 33	John (J.D.) Prescott	Julie Snider					
Votes to each	20198	7649		27847		0.0000359105110065716	0.003591051101
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
State Representative Dist 34	Dale Basham	Sue Errington					
Votes to each	8744	11293		20037		0.0000499076708090033	0.004990767081
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
State Representative Dist 35	Elizabeth Rowray	Melanie M. Wright					
Votes to each	16767	13570		30337		0.0000329630484227181	0.003296304842
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
Judge of the Circuit Court #3	No Candidate Filed	Linda Raul Wolf					
Votes to each		29499		29499		0.0000338994542187871	0.003389945422
Election	Republican Candidate	Democratic Candidate		Total # of Voters			
Judge of the Circuit Court #4	John M. Freick	No Candidate Filed					
Votes to each	34805			34805		0.0000287315040942393	0.002873150409
Election	Republican Candidate	Democratic Candidate		Total # of Voters			

Election		Republican Candidate
President and Vice President		Trump/Pence
Votes to each		81282632
Election		Republican Candidate
Govenor and Lieutenant Gov.		Holcomb/Crouch
Votes to each		1706724
Election		Republican Candidate
Attourney General		Todd Rokita
Votes to each		1721995
Election		Republican Candidate
US Representative Dist 6		Greg Pence
Votes to each		225318

f Voters	Probability my Vote is Decisive	Expected Benefit
158401939	0.0000000063130540340	0.000000631305
	0.0000003310838393674	0.000033108384
	0.0000003387971143972	0.000033879711
	0.0000030468112073904	0.000304681121

Votes to each	19756		
Election	Republican Candidate	Democratic Candidate	
State Representative Dist 32	Anthony J. (Tony) Cook	Amie Neiling	
Votes to each	26430	8615	
Election	Republican Candidate	Democratic Candidate	
State Representative Dist 33	John (J.D.) Prescott	Julie Snider	
Votes to each	20198	7649	
Election	Republican Candidate	Democratic Candidate	
State Representative Dist 34	Dale Basham	Sue Errington	
Votes to each	8744	11293	
Election	Republican Candidate	Democratic Candidate	
State Representative Dist 35	Elizabeth Rowray	Melanie M. Wright	
Votes to each	16767	13570	
Election	Republican Candidate	Democratic Candidate	
Judge of the Circuit Court #3	No Candidate Filed	Linda Raul Wolf	
Votes to each		29499	
Election	Republican Candidate	Democratic Candidate	
Judge of the Circuit Court #4	John M. Freick	No Candidate Filed	
Votes to each	34805		
Election	Republican Candidate	Democratic Candidate	

19756		0.0000506175339137477	0.005061753391
Total # of Voters			
35045		0.0000285347410472250	0.002853474105
Total # of Voters			
27847		0.0000359105110065716	0.003591051101
Total # of Voters			
20037		0.0000499076708090033	0.004990767081
Total # of Voters			
30337		0.0000329630484227181	0.003296304842
Total # of Voters			
29499		0.0000338994542187871	0.003389945422
Total # of Voters			

I'd be
canonized a
saint before my
vote would be
the deciding
factor"



“I’d have a larger benefit
picking up pennies off the
ground at the polling place.





Okay: Bugs

But, Features?



Deliverable

- Spreadsheet
- Research
- Writing
- Knowledge
- Demonstration of Understanding