

**D2: Representation, the Electoral College, Popular Vote and Voting Power - SOLUTIONS**

Group Activity

**Representative Democracy**

1. The United States has a representative democracy because we elect representatives for our national Senate and House of Representatives.

a. Is our current representation fair? Let's compare the percentage of voters who vote with each party, taken from a national poll. Color in the percentages on each side.

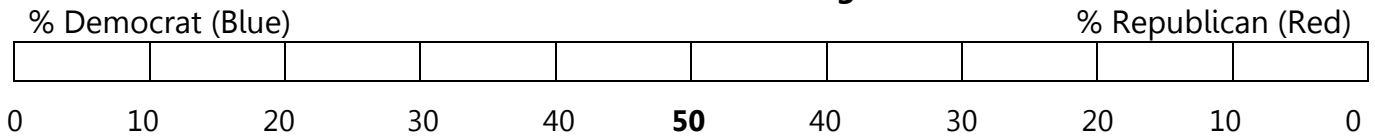
(Asked of independents) As of today, do you lean more to the Democratic Party or the Republican Party?

Figures are combined party identifiers + leaners

	Republicans + Republican leaners	Democrats + Democratic leaners
	%	%
2018 Oct 1-10	40	48

Source: <https://news.gallup.com/poll/15370/party-affiliation.aspx>

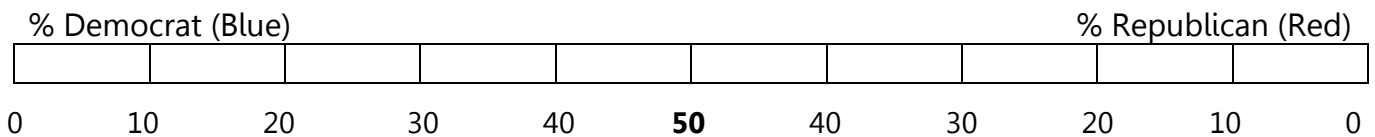
**Overall Voter Percentages**



b. Then search online for the current number of democrats and republicans in the Senate and the House and color in the percentages on each side.

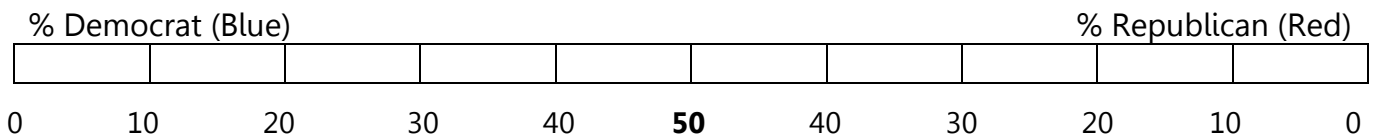
**Senate Percentages**

[https://www.senate.gov/pagelayout/history/one\\_item\\_and\\_teasers/partydiv.htm](https://www.senate.gov/pagelayout/history/one_item_and_teasers/partydiv.htm)



**House of Representatives Percentages**

<https://history.house.gov/Institution/Party-Divisions/Party-Divisions/>



c. Do you think our current representation is fair? Why or why not?

### Popular Vote vs. the Electoral College

2. In the U.S., the Electoral College is used in presidential elections. Each state is awarded a number of electors equal to the number of representatives (based on population) and senators (2 per state) they have in congress.

Most states award the winner of the popular vote in their state all their state's electoral votes, but not all. To explore how the Electoral College works, we'll look at a mini-country with only 4 states. Here is the outcome of a hypothetical election:

State	Smalota	Medigan	Bigonia	Hugodo
Population	50,000	70,000	100,000	240,000
Votes for A	40,000	50,000	80,000	50,000
Votes for B	10,000	20,000	20,000	190,000

a. If this country used a popular vote, which candidate would win the election?

**Votes for A:**  $40,000 + 50,000 + 80,000 + 50,000 = 220,000$  votes

**Votes for B:**  $10,000 + 20,000 + 20,000 + 190,000 = 240,000$  votes

**Based on the popular vote, Candidate B would win.**

b. Now suppose this country uses an Electoral College where each state has one representative for every 10,000 people and 2 senators. The number of electoral votes is the total of the representatives and senators. Each state will give all of their electoral votes to the winner of the popular vote in the state.

Use this information with the table above to fill in this table.

State	Smalota	Medigan	Bigonia	Hugodo
Number of Representatives	5	7	10	24
Number of Senators	2	2	2	2
Number of Electoral Votes	7	9	12	26
Electoral Votes for A	7	9	12	0
Electoral Votes for B	0	0	0	26

c. Which candidate wins the election based on the electoral college?

**Electoral Votes for A:**  $7 + 9 + 12 = 28$  electoral votes

**Electoral Votes for B:** 26 electoral votes

**Based on the Electoral College, Candidate A would win.**

d. Which method do you think is more fair and why? **Personal opinion**

### Voting Power

3. a. Do you think each state has the same voting power? Why or why not?

b. Let's calculate the voting power of each state.

State	Smalota	Medigan	Bigonia	Hugodo
Population	50,000	70,000	100,000	240,000
Number of Electoral Votes	7	9	12	26
Number of Electoral Votes per 10,000 people	$\frac{7}{5}$ =1.4	$\frac{9}{7}$ =1.29	$\frac{12}{10}$ =1.2	$\frac{26}{26}$ =1.08

c. Which states have more voting power? Less voting power?

**The smallest state has the most voting power and the largest state has the least.**

d. Which states in the U.S.A. do you think have more voting power? Less voting power? Why?

**Maybe the same trend? Let's look at that next.**

## Electoral Power of Today – 2010 Census

**Is each state equally represented in Congress and the Electoral College?**

4. After every census, the representatives are re-apportioned. The table below shows the 2010 population data which will be used until the 2020 census has been completed. The table shows the number of representatives, electoral college votes for the state, and the voting power. The table goes onto the next page.

a. To understand the table, calculate the missing values for representatives per million people and electoral power. Try your calculations for the first row to see if you are correct.

**Populations and Representatives from 2010 Census  
(using Hill-Huntington Method that you will learn soon)**

State	Population (Millions)	Number of House Representatives from 2010 Apportionment	Representatives per million people	Electoral Votes (Number of Representatives + 2 Senators per State)	Electoral Power (Electoral Votes per million people)
Alabama	4.8	7	1.46	9	1.88
Alaska	0.7	1	1.43	3	4.29
Arizona	6.4	9	1.41	11	1.72
Arkansas	2.9	4	1.38	6	2.07
California	37.3	53	1.42	55	1.47
Colorado	5.0	7	1.40	9	1.80
Connecticut	3.6	5	1.39	7	1.94
Delaware	0.9	1	1.11	3	3.33
D.C.	0.6	0	0	3	5.00
Florida	18.9	27	1.43	29	1.53
Georgia	9.7	14	1.44	16	1.65
Hawaii	1.4	2	1.43	4	2.86
Idaho	1.6	2	1.25	4	2.50
Illinois	12.9	18	1.40	20	1.55
Indiana	6.5	9	1.38	11	1.69
Iowa	3.1	4	1.29	6	1.94
Kansas	2.9	4	1.38	6	2.07
Kentucky	4.4	6	1.36	8	1.82
Louisiana	4.6	6	1.30	8	1.74

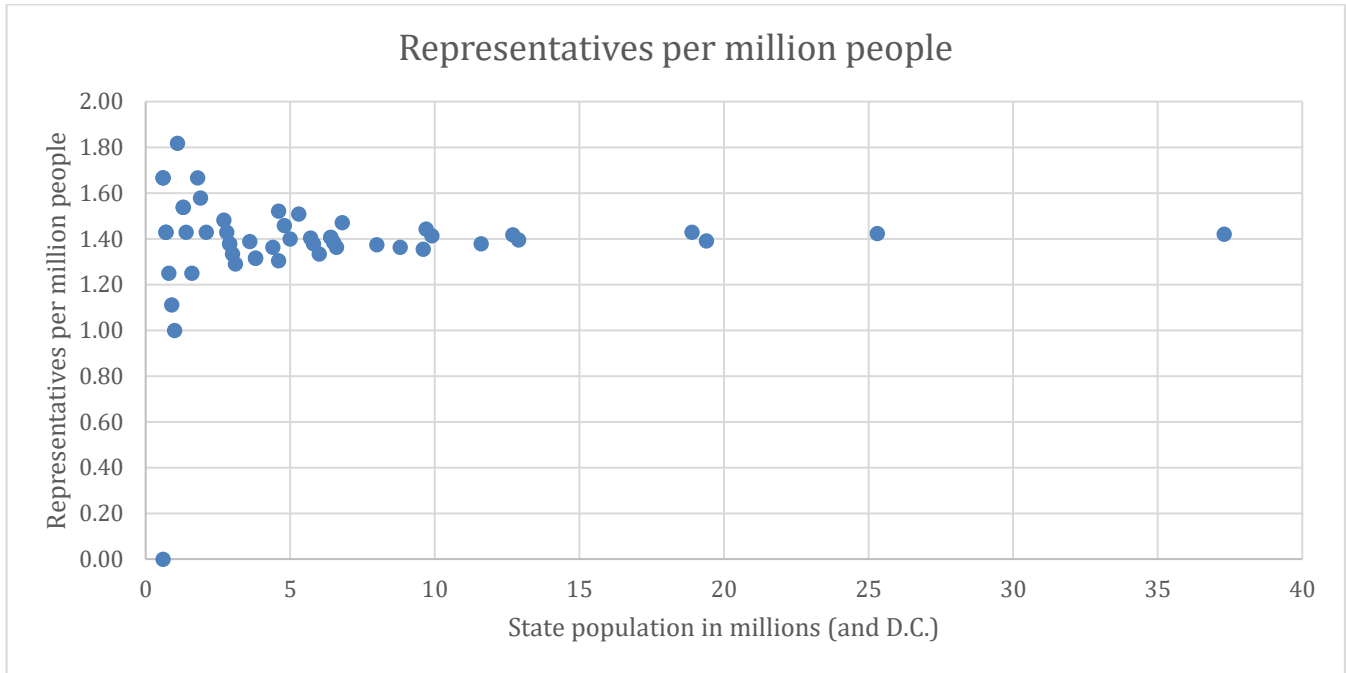
Maine	1.3	2	1.54	4	3.08
Maryland	5.8	8	1.38	10	1.72
Massachusetts	6.6	9	1.36	11	1.67
Michigan	9.9	14	1.41	16	1.62
Minnesota	5.3	8	1.51	10	1.89
Mississippi	3.0	4	1.33	6	2.00
Missouri	6.0	8	1.33	10	1.67
Montana	1.0	1	1.00	3	3.00
Nebraska	1.8	3	1.67	5	2.78
Nevada	2.7	4	1.48	6	2.22
New Hampshire	1.3	2	1.54	4	3.08
New Jersey	8.8	12	1.36	14	1.59
New Mexico	2.1	3	1.43	5	2.38
New York	19.4	27	1.39	29	1.49
North Carolina	9.6	13	1.35	15	1.56
North Dakota	0.7	1	1.43	3	4.29
Ohio	11.6	16	1.38	18	1.55
Oklahoma	3.8	5	1.32	7	1.84
Oregon	3.8	5	1.32	7	1.84
Pennsylvania	12.7	18	1.42	20	1.57
Rhode Island	1.1	2	1.82	4	3.64
South Carolina	4.6	7	1.52	9	1.96
South Dakota	0.8	1	1.25	3	3.75
Tennessee	6.4	9	1.41	11	1.72
Texas	25.3	36	1.42	38	1.50
Utah	2.8	4	1.43	6	2.14
Vermont	0.6	1	1.67	3	5.00
Virginia	8.0	11	1.38	13	1.63
Washington	6.8	10	1.47	12	1.76
West Virginia	1.9	3	1.58	5	2.63
Wisconsin	5.7	8	1.40	10	1.75
Wyoming	0.6	1	1.67	3	5.00
<b>TOTAL</b>	<b>310</b>	<b>438</b>		<b>538</b>	

b. Does the electoral power of each state look fair to you from the table?

**The electoral power seems to vary a lot from 1.5 up to 5 electoral votes per million people. This doesn't seem very fair.**

c. Below is a graph of the representatives per million people. Does the representation look fair to you?

**There is a lot more variation in the smaller states that doesn't seem fair. Overall it seems to average out to about 0.7 representatives per million people.**



d. Which states have the least number of representatives per million people?

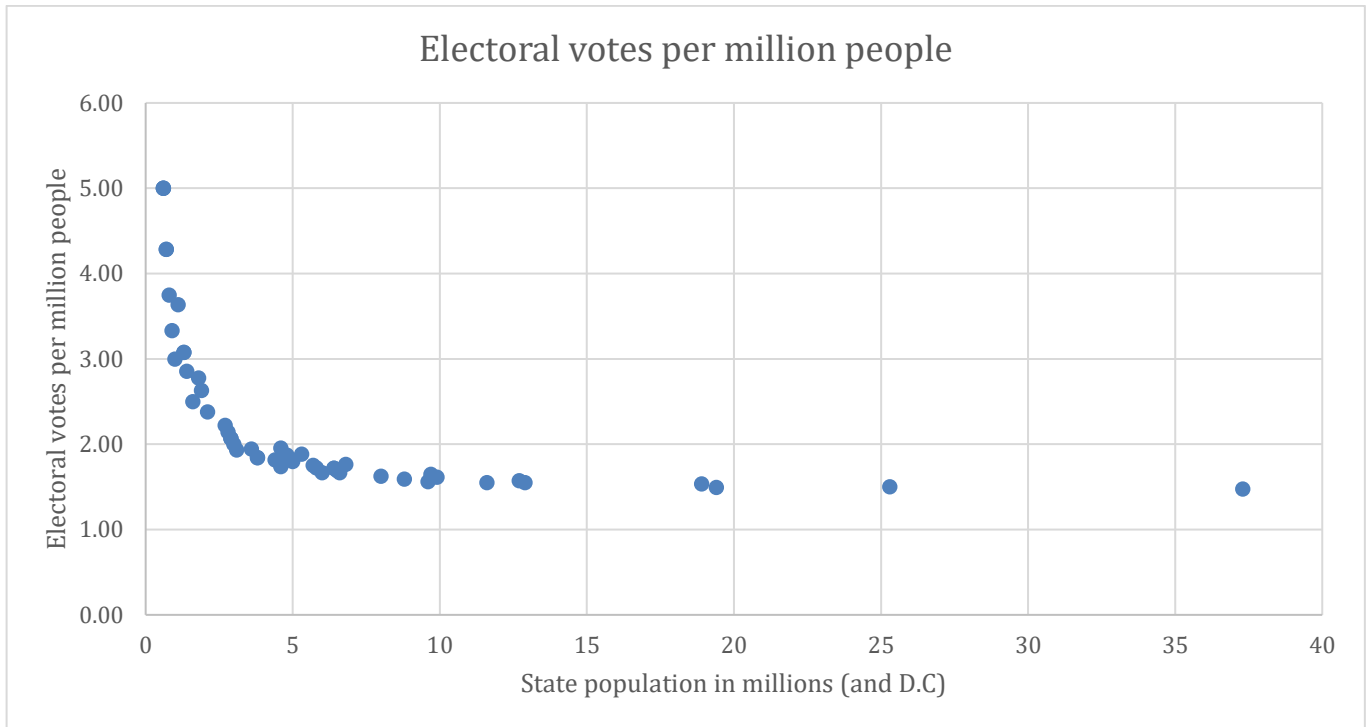
**D.C., Montana and Delaware have the smallest representation.**

e. Which states have the most representatives per million people?

**Rhode Island, Nebraska and Vermont have the largest representation.**

f. Below is a graph of the electoral power per million people. Does this look fair to you?

**The smaller states have a lot more electoral power per person than the larger states. This does not look fair to me.**



g. Which states have the least electoral voting power?

**California, New York and Texas have the least electoral voting power with 1.47-1.5 electoral votes per million people.**

h. Which states have the most electoral voting power?

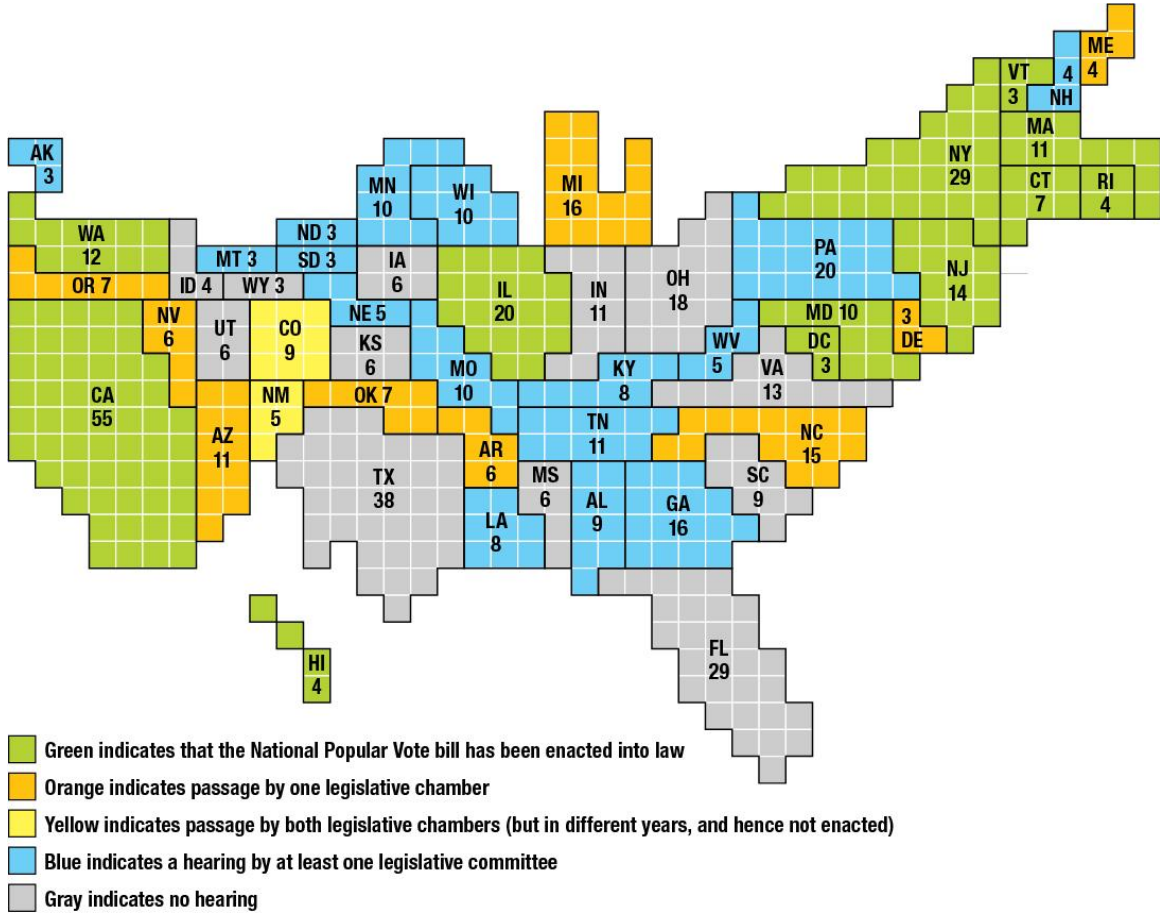
**Wyoming, Vermont and D.C. have the most electoral power with 5 votes per million people.**

i. Do you think our electoral voting system is fair? Why or why not? **Personal Opinion**

### National Popular Vote Interstate Compact

5 a. Read about the national popular vote movement on this web page and explore the rest of the website: <https://www.nationalpopularvote.com/written-explanation>

This graph shows the area of each state as the number of electoral votes.



b. How many states or electoral votes would need to pass this law to have the effect of a popular vote?

**We would need 270 electoral votes to have a majority of electoral votes going to the winner of the popular vote.**

c. Would you vote for a national popular vote bill in Oregon? Why or why not?  
**Personal opinion.**