

Name: \_\_\_\_\_

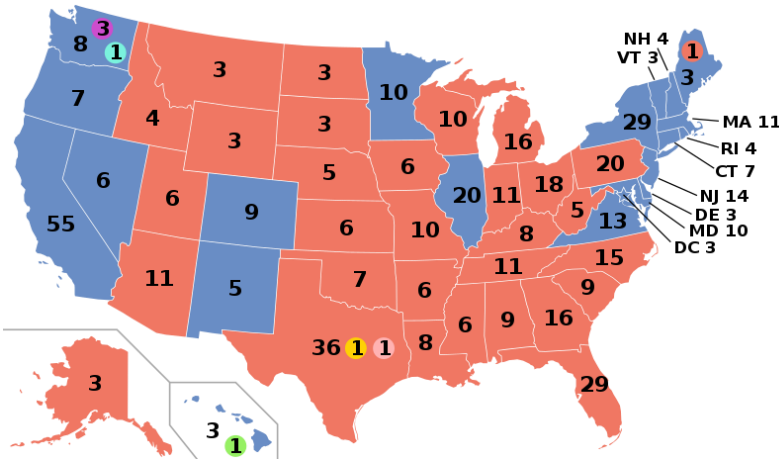
# Algebra Handout: Lesson 1.1

Topics: functions as maps, non-functions

## Lesson 1.1 Guided Notes

We elect our president using the **Electoral College**. The Electoral College requires a candidate to win 270 electoral votes to win the presidency, regardless of popular vote.

### 2016 Election



Clinton



Trump

48.2%

46.1%

Popular Vote

227

304

Electoral College

Lost

Won

Result

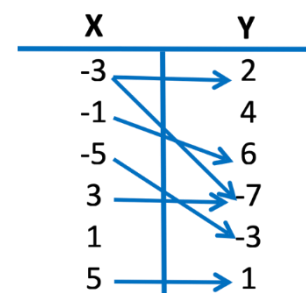
**Today's Key Analysis:** Are electoral votes a function of people's votes?

### Functions as maps

1. Imagine you were asked to find the place associated with the name "Connecticut." The map given to the right would not be helpful. Explain why.



2. Imagine you were asked to find the y-value associated with the x-value of -3. The map given to the right would not be helpful. Explain why.



3. For each example, say whether the table of values describes a function. Justify your answer.

a)

X	Y
-3	2
-1	4
-5	6
3	-7
1	-3
5	1

b)

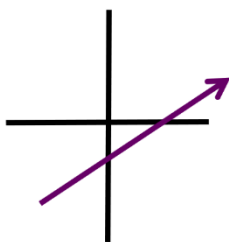
X	Y
-3	2
-1	4
-5	6
3	-7
1	-3
5	1

4. Describe what needs to be true for a relationship to be considered a **function**:

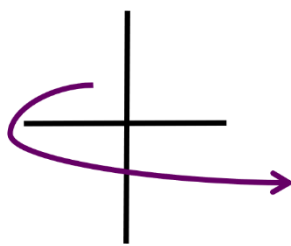
### Non-functions

Are these functions? Provide an answer and justify.

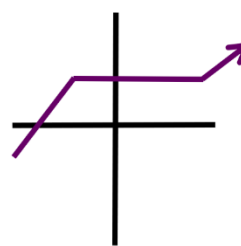
1.



2.



3.



## The Electoral College

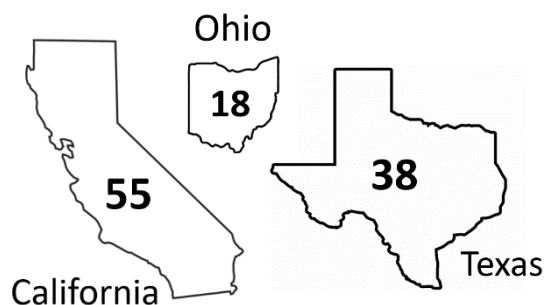
In the Presidential Election, each state's electoral vote total is equal to its number of senators (two per state) plus its number of Congressional House representatives (number depends on state's population size). Candidates need 270 total electoral votes to win the Presidency.

Are electoral votes a function of people's votes (voter share)?  
Justify your answer using the table to the right.

Candidate	Voter Share	Electoral Votes	
Trump 2016	46%	304	<b>Won</b>
Clinton 2016	48%	227	<b>Lost</b>
McCain 2008	46%	173	<b>Lost</b>

## Lesson 1.1 Discussion

Only consider the three states below. For each of the following vote scenarios, which party (Democrat or Republican) would win the popular vote? Which would win the electoral college? Show your work:

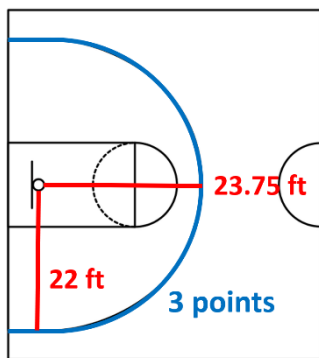


- a) California: 10 million Republican, 14 million Democrat  
Texas: 10 million Republican, 7 million Democrat  
Ohio: 3 million Republican, 4 million Democrat

- b) California: 10 million Republican, 14 million Democrat  
Texas: 9 million Republican, 8 million Democrat  
Ohio: 4 million Republican, 3 million Democrat

**Discussion:** *Should* electoral votes be a function of people's votes? Justify your answer.

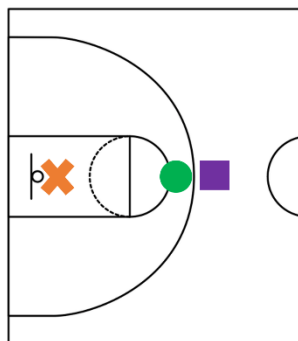
## Lesson 1.1 Practice



In basketball, the number of points from a basket depends on how far the shooter is from the hoop. Specifically, there is a “three-point line.” If the shot is from beyond the three-point line, the basket counts for three points. Otherwise, the basket counts for two points.

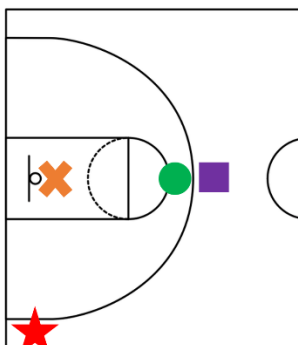
**Note:** The three-point line is almost a perfect half-circle around the hoop. However, the line is straight in the corners of the court. So, the three-point line is closer to the hoop in the corners of the court.

1. The chart and table to the right show three shot distances (in feet from the hoop’s rim) and their point values. Are the point values a function of distance from the rim? Explain.



Location	Distance from Rim	Points
✗	3	2
●	23	2
■	24	3

2. This chart includes a “corner three” – a three-point shot from the corner of the court. Are the point values still a function of distance from the rim? Explain.

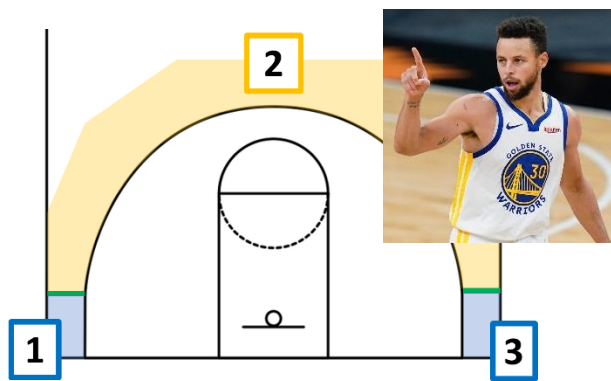


Location	Distance from Rim	Points
✗	3	2
●	23	2
■	24	3
★	23	3

3. In his 2014-2015 MVP season, Stephen Curry had the following shooting stats at these areas on the court:

Area	% of shots made
1	63.2%
2	42.6%
3	52.3%

Many coaches discourage players from shooting corner three-pointers, since it’s harder to use the backboard from the corner. Is this wise? Explain your answer.



Data from: <https://bleacherreport.com/articles/2562997-korver-or-curry-comparing-nbas-most-elite-3-point-snipers>