

STATE APPORTIONMENT DAY 2

Student Name: _____ Date: _____

Warm Up

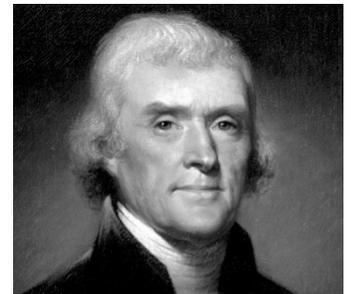
Find the arithmetic mean and the geometric mean of each pair of numbers. Round to 2 decimal places when needed.

| | Arithmetic Mean | Geometric Mean |
|----------|-----------------|----------------|
| 6 and 12 | | |
| 5 and 9 | | |
| 4 and 7 | | |

What do you notice about how the two values compare to each other?

1. Watch the video on the Jefferson method, apply the Jefferson method for 25 representatives. Link: <https://tinyurl.com/SGJefferson>

Use the tables to apply the Jefferson method.



Jefferson's Apportionment for 25 Seats

| State | Population | Calculation | Number of Seats |
|-------|------------|-------------|-----------------|
| A | 15,000 | | |
| B | 17,000 | | |
| C | 28,000 | | |
| D | 40,000 | | |

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|-------|------------|-------------|-----------------|
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Why did Jefferson use this method?

What are the differences and similarities between the Jefferson Method and the Hamilton Method?

2. The current method, Huntington-Hill, used by the US uses the geometric mean as the denominator and the state's population in the numerator. Does this method work well?

Watch the video in the link below and complete the table.

<https://tinyurl.com/SGHHmethod>

Huntington-Hill's Apportionment for 25 Seats

| State | Population | Calculation | | | | Number of Seats |
|-------|------------|-------------|-----------------|---------------------|------------------------------------|-----------------|
| | | Quota | Lower Quota (n) | Upper Quota (n + 1) | Geometric Mean $\sqrt{(n(n + 1))}$ | |
| A | 15,000 | | | | | |
| B | 17,000 | | | | | |
| C | 28,000 | | | | | |
| D | 40,000 | | | | | |

Huntington-Hill's Apportionment for 17 Seats

| State | Population | Calculation | | | | Number of Seats |
|-------|------------|-------------|-----------------|---------------------|------------------------------------|-----------------|
| | | Quota | Lower Quota (n) | Upper Quota (n + 1) | Geometric Mean $\sqrt{(n(n + 1))}$ | |
| A | 15,000 | | | | | |
| B | 17,000 | | | | | |
| C | 28,000 | | | | | |
| D | 40,000 | | | | | |

2. Look up the actual state populations and their apportionments.

https://en.wikipedia.org/wiki/United_States_congressional_apportionment

How many representatives does Delaware have? How does Delaware compare to other states? What are your thoughts about the current state apportionments?

What else jumps out at you? What do you notice? Explore the Wikipedia and pick out something that speaks to you.