

TOPIC: JEFFERSON'S METHOD

Jefferson's Method

◆ **Jefferson's method** of apportionment uses *trial and error* to find a **modified divisor** and **modified lower quotas**.

EXAMPLE

A city receives a donation of 100 science kits to apportion to their 5 elementary schools fairly. Use **Jefferson's method** to apportion the kits.

Schools	Elm	Birch	Oak	Maple	Pine
Student Pop	748	689	637	494	432
Modified Quota					
Apportionment (Modified Lower Quota)					

Modified Divisor:

💡 *Hint: For 2-digit SD, try
1-2 lower.*

Modified Quota:

New

$$MQ = \frac{\text{group population}}{\text{modified divisor}}$$

HOW TO: Jefferson's Method

- 1) Find **standard divisor** (SD)
- 2) Choose a **modified divisor** (d)
that is _____ than SD
- 3) Use d to find **modified quota**
(MQ) for each group
- 4) Round MQs _____ to get
modified *lower* quota
- 5) Check if *all* items are apportioned
 - If *leftovers*, return to **2)** &
choose _____ d
 - If *too many* items, return to **2)** &
choose _____ d

TOPIC: JEFFERSON'S METHOD

EXAMPLE

A University Student Council is being formed with representatives from its four colleges. Representation on each council is based on student enrollment, as shown below. Apportion the 100 seats on the council to the four colleges using Jefferson's method.

College	Enrollment
Nursing	3,420
Arts & Sciences	2,880
Engineering	2,160
Education	1,140

Recall

$$MQ = \frac{\text{group population}}{\text{modified divisor}}$$

HOW TO: Jefferson's Method

- 1) Find **standard divisor** (SD)
- 2) Choose a **modified divisor** (d) that is lower than SD
- 3) Use d to find **modified quota** (MQ) for each group
- 4) Round MQs down to get modified *lower* quota
- 5) Check if *all* items are apportioned
 - If *leftovers*, return to **2)** & choose lower d
 - If *too many* items, return to **2)** & choose higher d

PRACTICE

A city has a youth association with three programs for different age groups: Child (0-6), Tween (7-12), and Teen (13-18). They want to apportion the 30 new volunteers fairly based on the number of youths served by each of these programs. Use Jefferson's Method to get a fair apportionment.

Program	# of Youths
Child	1543
Tween	1234
Teen	897

Recall

$$MQ = \frac{\text{group population}}{\text{modified divisor}}$$