

Thinking Task!

Paul

- A set of five integers $\{17, 12, 10, 21, n\}$ has the property that the median is equal to their arithmetic mean.

- Determine all possible values of n .

~~★~~ If median = 12 ~~★~~ If median = 15

$n = 0$ $n = 15$

$0, 10, 12, 17, 21 = 60$

If median = 17

$n = 25$

$10, 12, 15, 17, 21 = 75$

If median = 17

~~★~~ $10, 12, 17, 21, 25 = \frac{85}{5}$

$5, 10, 12, 17, 21$

$n = \{0, 15, 25\}$

$10, 12, 17, 21$
15
↓
middle # in value order

$10 + 12 + 17 + 21$
 $22 + 17$
 $39 + 21$
 $60 + 21$
 81

How do we find the median of a data set?

order the numbers
middle # = 10

How do we find the mean of a data set?

mean = $\frac{\text{sum}}{\text{average \# of terms}}$

$\frac{25}{5}$

maybe only 3 ways

Which **Math Practice Standards** are you using to work on this thinking task?

We can submit our work/answers online for this one for a change to be featured on a math blog!

Thinking Task!

CGMerron-W

- A set of five integers {17, 12, 10, 21, n} has the property that the median is equal to their arithmetic mean.

What if $n=15$

- Determine all possible values of n.

mean $\frac{17+12+10+21+15}{5} = \frac{75}{5} = 15$

median 10, 12, **15**, 17, 21

mean $\frac{17+12+10+21+25}{5} = \frac{85}{5} = 17$

median 10, 12, **17**, 21, 25

The possible values of n are

define variable $\{n \mid n=0, 15, 25\}$

such that

describe set here

Set builder notation

mean = median
possible values
of n
0

How do we find the median of a data set?

the middle number when the data is in order from least to greatest

0, 10, 12, 17, 21

n? $n=0$

0, 10, **17**, 21

n?

How do we find the mean of a data set?

The formula for calculating the arithmetic mean is to add up the # in a set & divide by the total quantity of number in the set

mean = $\frac{17+12+10+21+n}{5} = \frac{60}{5}$

(Coverage)

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Thinking Task!

- A set of five integers $\{17, 12, 10, 21, n\}$ has the property that the median is equal to their arithmetic mean.
- Determine all possible values of n .

$\{ \dots -3, -2, -1, 0, 1, 2, 3 \dots \}$

10, 12, 17, 21, n ?

$$\frac{10+12+17+21+n}{5} = \frac{60+n}{5}$$

Median: 10, 12, n , 17, 21

Mean: $\frac{60+n}{5}$

Setting Median = Mean: $n = 12$

Define

How do we find the median of a data set?

the middle number when the data is ordered from low to high.

How do we find the mean of a data set?

the average add up all the terms in a set then divide by the number of terms

the possible values of n are

define variable

$\{n \mid n = 0, 15, 25\}$

as such as

set builder notation

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