

$$12 - n, 12, 12 + n$$

What is the average (arithmetic mean) of the 3 quantities in the list above?

- (A) 4
- (B) 12
- (C) 18
- (D)  $4 + \frac{n}{3}$
- (E)  $12 + \frac{n}{3}$



Mean = add them all up then divide the answer by how many number there are !

answer = 4

- 1) A team plays 4 matches. The goals scored in each match are 6, 7, 4, 7. How many goals do they need to score in their fifth match to raise their average to 7 goals per match?
- 2) Give me a set of 5 different numbers where the mean is the same as the median.
- 3) Give me another, different set of 5 numbers where the mean is the same as the median.
- 4) Give me a set of 6 numbers where the mean is the same as the median.
- 5) Give me a set of 4 numbers where the mean is the same as the mode.



Your average speed in skateboarding to your friend's house is 5 mi/h. It is possible that your instantaneous speed at some point was

- a) less than 5 mi/h.
- b) 5 mi/h.
- c) more than 5 mi/h.
- d) Any of these.



Discuss !!

Would these answer by the same for the MEDIAN, MODE or RANGE values?? explain...

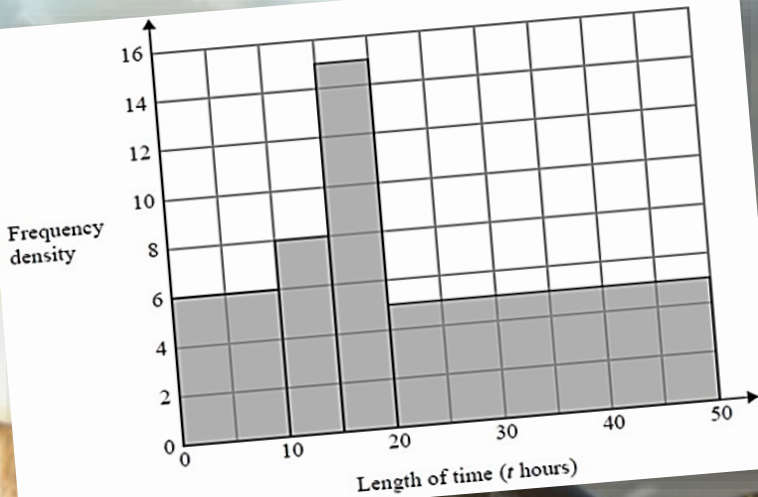
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Five integers are to be written on the five cards

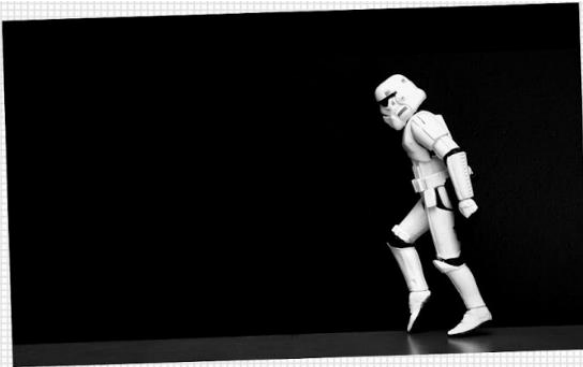
The median, mode, mean and range must all be 5

There is a single mode

find the two answers



Discuss finding the mean, median, mode car journey times per month?



If you walk to work at 4mph and moonwalk home at 6mph, what is your average speed?

4mph? 4.8mph? 5mph? 5.6mph? 6mph?

...the answer is not as straight forward as you might think! Consider how long you spend at each speed. Are you travelling the same distance back?

*answer is time=1hr + 4/6hr Distance=8miles so speed is 8 / (1.66) = 4.8mph*

3,17,3,44,21,3,8,32,75

Mean:

Median:

Mode:

Range

Outlier

(1) four whole numbers with  
 $\text{mean} = \text{median} = \text{mode} = \text{range}$   
(and there is a mode)  
what is a general form for all such  
data sets?

(3) four whole numbers with  
 $\text{median} = 2 \times \text{mode}$   
 $\text{mean} = 2 \times \text{median}$   
what is a general form  
for all such data sets?

(2) four numbers (with a mode)  
and with

$$\begin{aligned}\text{median} &= \text{mode} - 1 \\ \text{mean} &= \text{median} - 1\end{aligned}$$

what is a general form  
for such data sets?

(4) for a set of 4 numbers  
(with a mode)

prove that the median cannot  
be bigger than the mode  
and the mean

## Grouped MEAN - Midpoints

We find the **Average Number of Coffees per Hour** by adding two new columns to our Frequency Table and using a Formula.

Cappuccinos	Freq	Interval Midpoint	
0-3	2	0,1, 2,3	-> <b>1.5</b>
4-7	3	4,5, 6,7	-> <b>5.5</b>
8-11	8	8,9, 10,11	-> <b>9.5</b>
12-15	3	12,13, 14,15	<b>13.5</b>
16-19	2	16,17, 18,19	<b>17.5</b>
<b>TOTALS</b>	<b>18</b>		

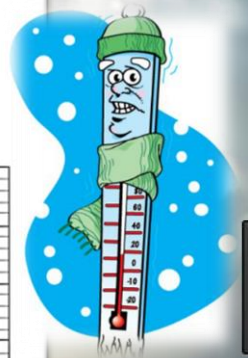
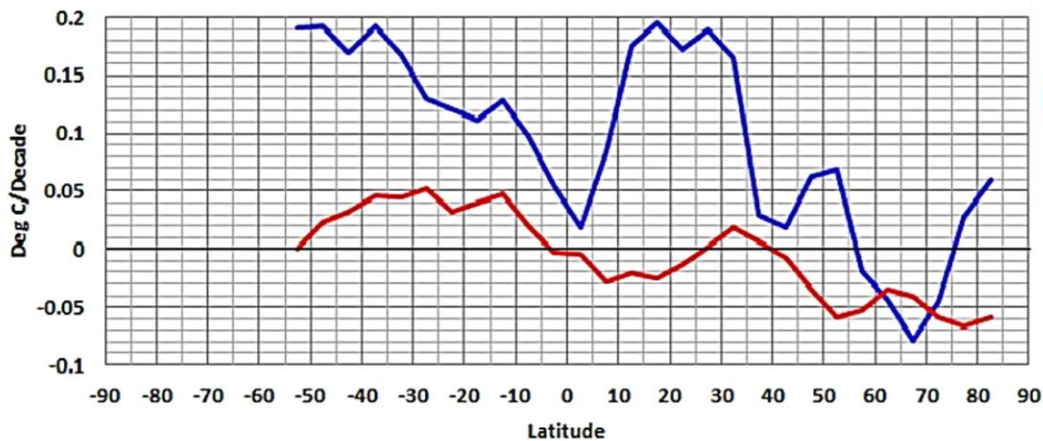
We find Interval Midpoints by getting the exact middle (or Median) of each of our data classes, or data groups.

Eg. Exactly half way between 0 to 3 is the value of 1.5



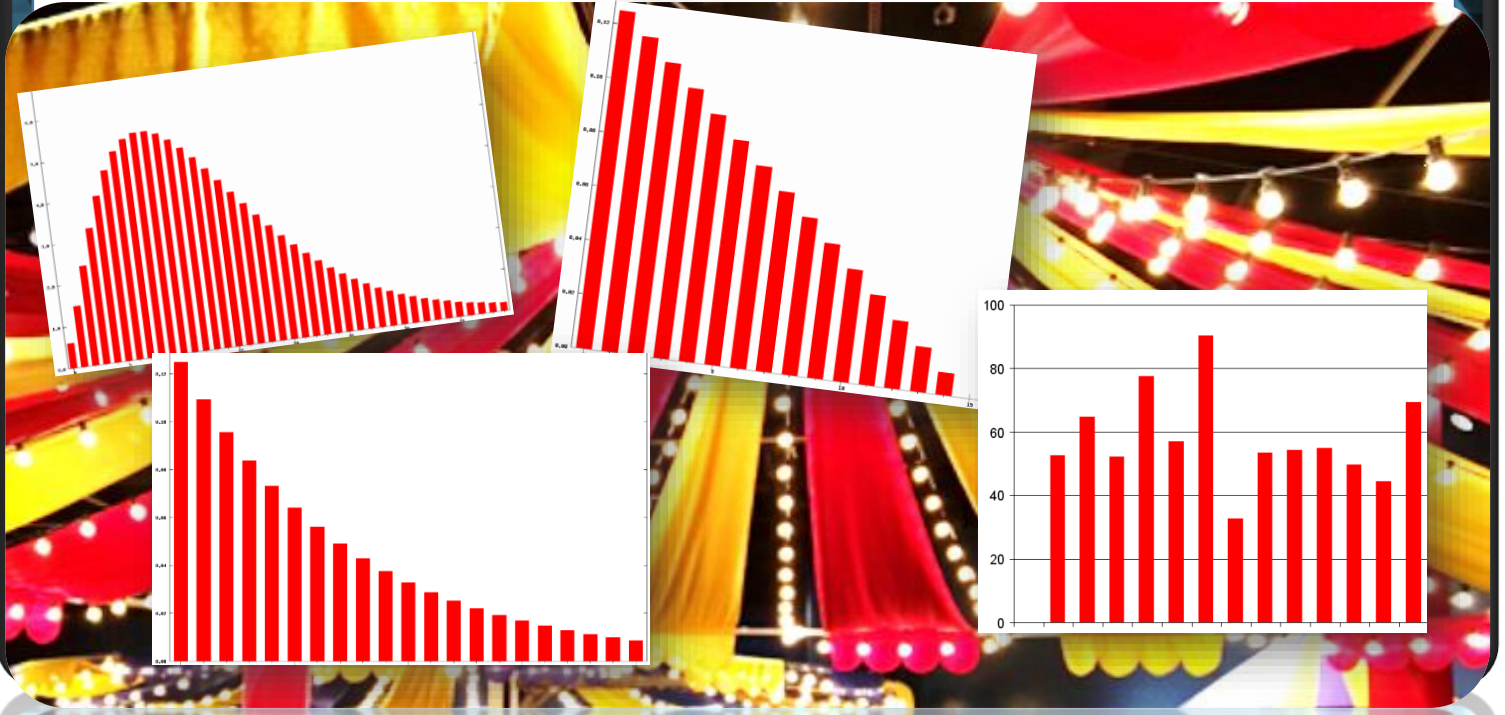
Can you find the average number of cappuccinos using the mid points?

Global Land Surface Diurnal Temperature Range Trends (DTR)  
Zonal (Latitudinal) Mean - Linear Trend (Deg C Per Decade)  
Berkeley Earth Surface Temperature  
CMIP5 Multi-Model Mean TAS w/ Oceans Masked (Historic/RCP6.0)  
Jan 1988 to Dec 2011



Discuss how you might find an average temperature from the graph. What about the temperature range?

For each graph discuss where the average, median or mode would appear and why you state that.



What is the median?

2 8 10 4 2 8 2

Submit

What is the mode?

-8 8 4 8 8 -8 4

Submit



What is the range?

0 0 -4 -4 -3 -3 -5 0 0

Submit

What is the mean?

8 4 -5 1 -3 9 5 5

Submit