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Centre, spread and shape of distribution

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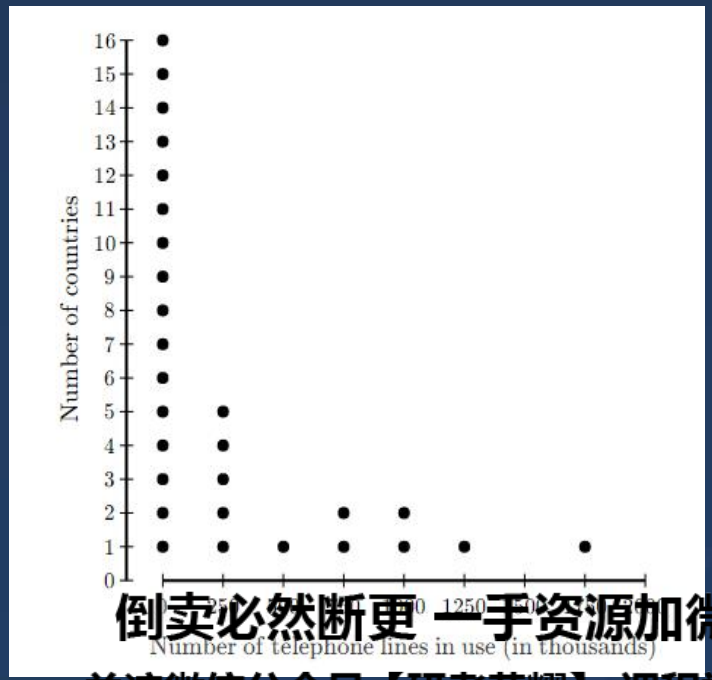
1.The number of telephone lines in each country in Central America and the Carribean is shown above in a dot plot. The number of telephone lines in each country has been rounded to the nearest 250 thousand. According to the dot plot, what is the median number of telephone lines (in thousands)?



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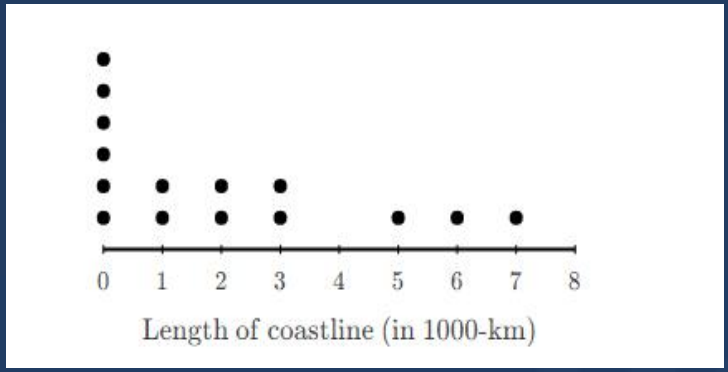
2.In the dot plot above, the length of the coastline of each country in South America is shown in thousands of kilometers (1000-km), rounded to the nearest thousand kilometers. According to the dot plot, what is the mean length of coastline, in thousands of kilometers?



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3.During a five-day period, Marta served a different number of customers at her flower shop each day. The mean number of daily customers served during this period was 17. In the following month, during the same five-day period, she served 16 customers for four of the days, but on the fifth day, she served 25 customers. What is the difference between the means of the number of customers she served during the two five-day periods?

A. 0.8
B. 1.0
C. 2.4
D. The two means are equal.

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4.The table above shows the annual average per pupil educational expenditures in the United States from 2008 through 2012. What is the range of the per pupil expenditures?

Year	2008	2009	2010	2011	2012
Per pupil expenditure	$11,223	$11,665	$11,824	$11,864	$11,735

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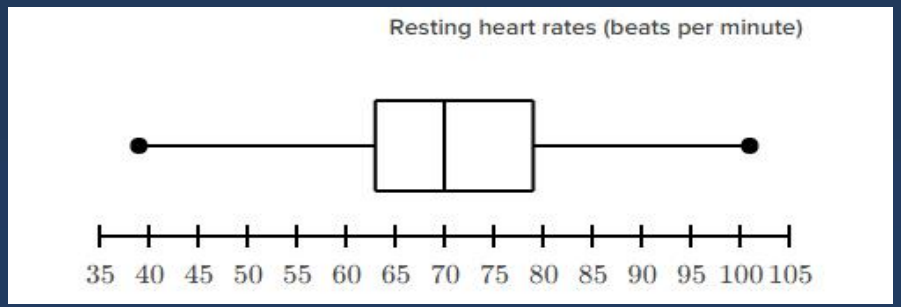
5.The box plot above summarizes the resting heart rates, in beats per minute, of the members at a gym. What is the range of resting heart rates?



A. 16 beats per minute
B. 31 beats per minute
C. 62 beats per minute
D. 70 beats per minute

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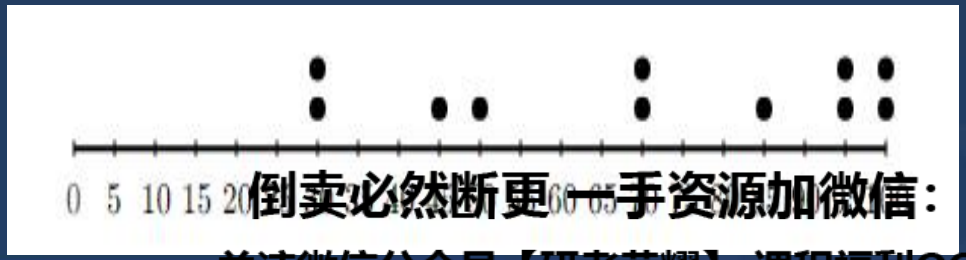
6.A census was taken in 11 African countries. For each country, the amount of the population that had access to water from the water supply industry was computed and recorded to the nearest 5 percent. This amount was expressed as a percentage of the total population and plotted above. According to the dot plot, what is the range of these percentages?

Percentage of population supplied by water supply industry



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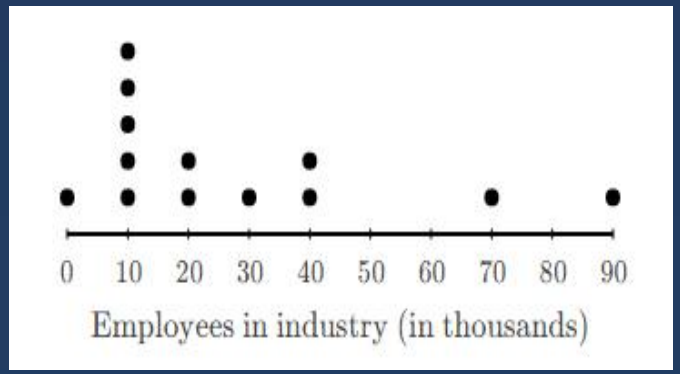
7.The number of employees in each industry in Seattle was recorded and rounded to the nearest 10 thousand. The results are displayed in the dot plot above. According to the dot plot, what is the median number of employees, in thousands?



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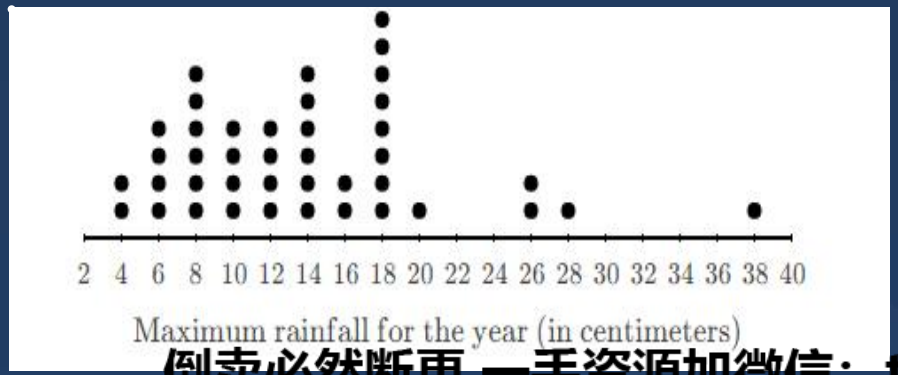
8.Daily rainfall in centimeters was recorded over a 41-year period in Turramurra. For each year, the day with the most rain in centimeters was plotted above according to its amount of rainfall to the nearest 2 centimeters. According to the dot plot, what is the maximum amount of rainfall that was ever recorded in a single day in Turramurra, in centimeters?



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9.A linguistics library contains several archives of language samples. The table above gives the number of distinct languages referenced in each archive. What is the range of numbers of distinct languages referenced?

Archive	Number of distinct languages
Archive A	111
Archive B	3
Archive C	136
Archive D	26
Archive E	53
Archive F	258
Archive G	17

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10.On a message board, participants listed words whose letters are all in alphabetical order, such as "almost." The table at left lists the number of words they listed with each letter count. What was the median letter count of the words they listed?

Letter count	Number of words listed
4 letters	12
5 letters	49
6 letters	12
7 letters	9
8 letters	1

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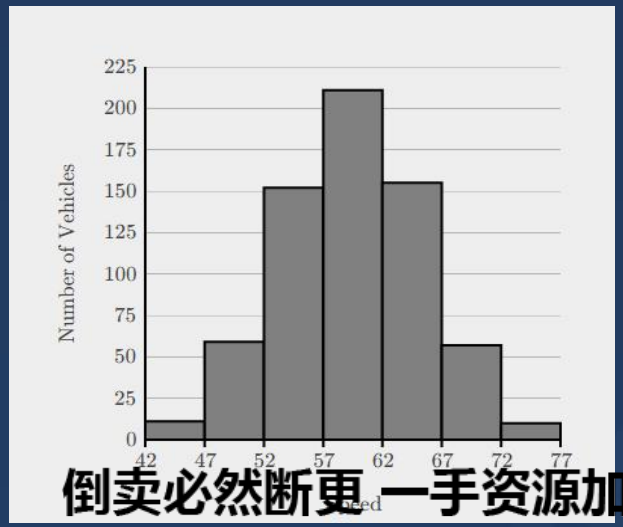
11.A police officer recorded the travel speeds, in miles per hour, of traffic on a major arterial road. The histogram to the left shows the number of vehicles driving at each speed. Which statement best compares the mean and the median of the data?



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A. There is no mean value for this data.
B. The mean is greater than the median.
C. The median is greater than the mean.
D. The mean and median are approximately equal.

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12.The table at left partially reports the numbers of civil aircraft produced in the United States during the course of 5 months. If there was a mean of 325 civil aircraft produced during that time, how many were produced in month B?

Month	Civil aircraft produced
A	400
B	?
C	286
D	350
E	290

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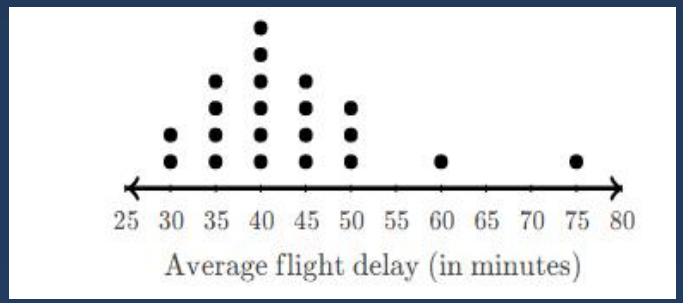
13.For each of the largest 21 airline companies in Europe, the average delay of flights was calculated and shown in the dot plot above. If we remove the two airlines with the highest flight delays from the dot plot, which of the following will result?

A. The mean will decrease only.
B. The mean and range will decrease only.
C. The mean and median will decrease only.
D. The mean, median, and range will decrease.



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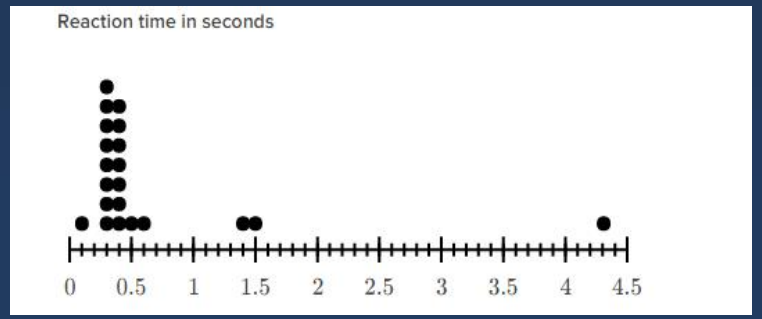
14.A class tested their reaction times to catch a falling object. The dot plot above gives their results, to the nearest tenth of a second. Which statement best compares the median and the mean for this data?

A. The mean is greater than the median.
B. The median is greater than the mean.
C. The mean and the median are about the same.
D. There is not enough information to determine the mean



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15.Elena mailed 6 packages, with the following shipping charges.
$ 6.15, $ 4.78. $ 5.61, $ 4.41, $ 4.21, $ 6.54
If she mails a 7th package for $ 5.61, how will that affect the median shipping charge?

A. The median will remain the same.
B. The median will increase by $0.05.
C. The median will increase by $0.41.
D. The median will increase by $0.60.

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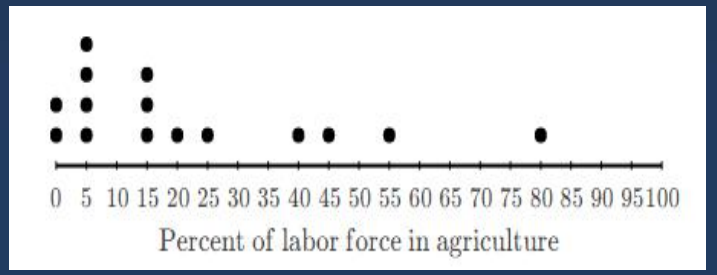
16.For each of the 15 countries in the Middle East, the percentage of the labor force in agriculture was recorded to the nearest 5 percent. This data is shown in the dot plot above. Based on the shape of the data, which of the following correctly compares the mean and the median?

A. The mean is less than the median.
B. The mean is greater than the median.
C. The mean is equal to the median.
D. There is not enough information to compare the mean and the median.



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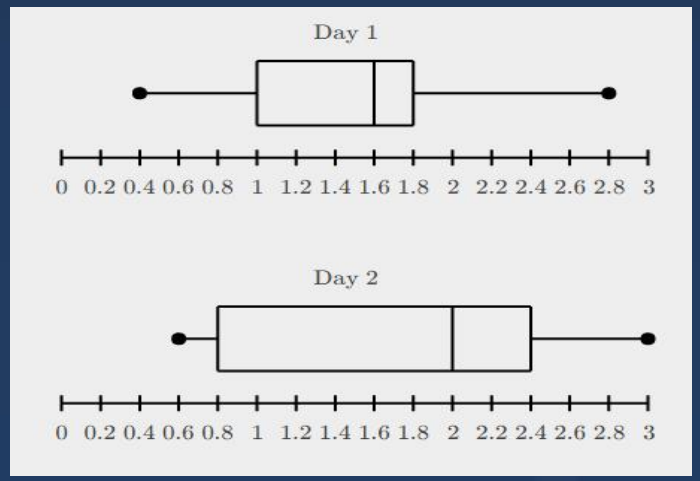
17.The box-and-whisker plots at left show data on the heights, in meters, of all waves measured at an ocean beach on two separate days. What is the difference of the median wave height from day 1 and the median wave height from day 2, in meters?



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18.An environmental biologist recorded the numbers of snail eggs in the first clutch (group) laid at different temperatures, as shown in the histograms to the left. At 22 C, the snails laid a mean of 49 eggs. At 25 C, they laid a mean of 31 eggs. Which statement best compares the standard deviations of the numbers of eggs?

A. Both sets vary too much to have a valid standard deviation.
B. The standard deviation is greater when the first clutch is at 22 C.
C. The standard deviation is greater when the first clutch is at 25 C.
D. The standard deviations at both temperatures are about the same.

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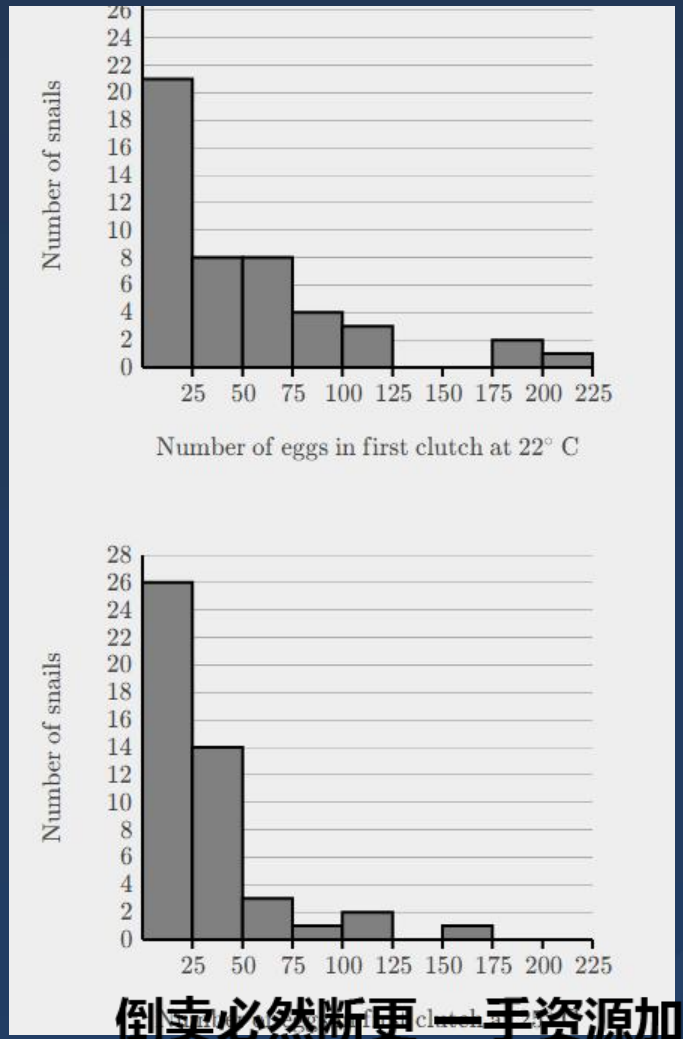

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19.The dot plot above depicts the heights in inches of players on a professional basketball team. What would happen to the standard deviation of the data set if the lowest and highest heights were removed?

A. It would increase.
B. It would decrease.
C. It would remain the same.
D. There is not enough information to determine the impact on the standard deviation of the data set.

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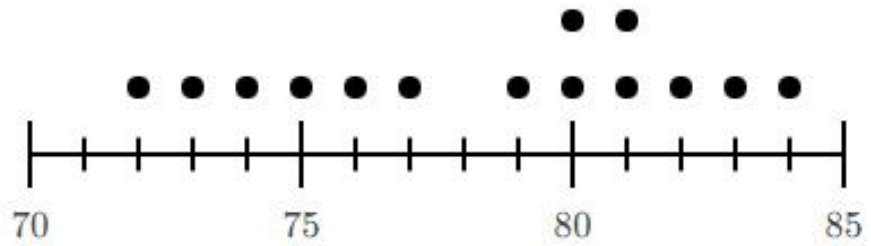

Heights of NBA players in inches

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20.Judah, a marketing consultant, tracked how many times his customers asked a question during his sales calls over a one month period. Based on the results shown in the distribution above, what was the median number of questions asked?

A. 4
B. 4.5
C. 5
D. 5.5

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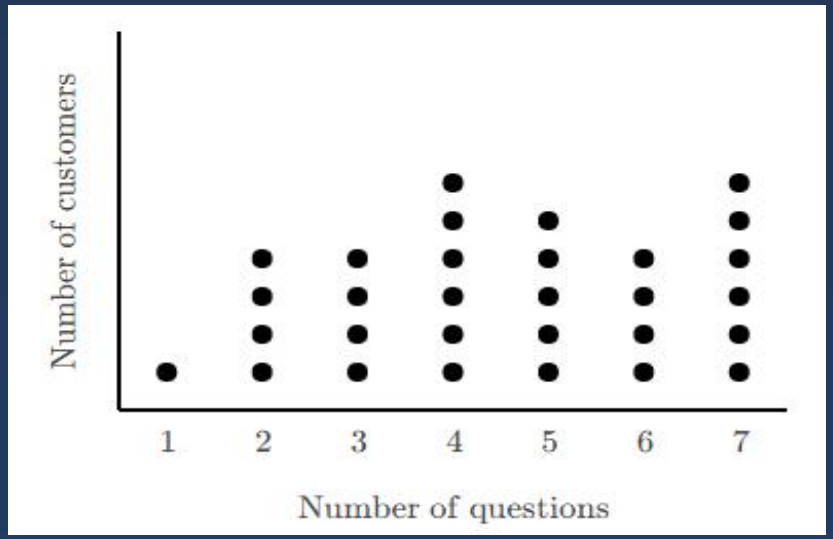

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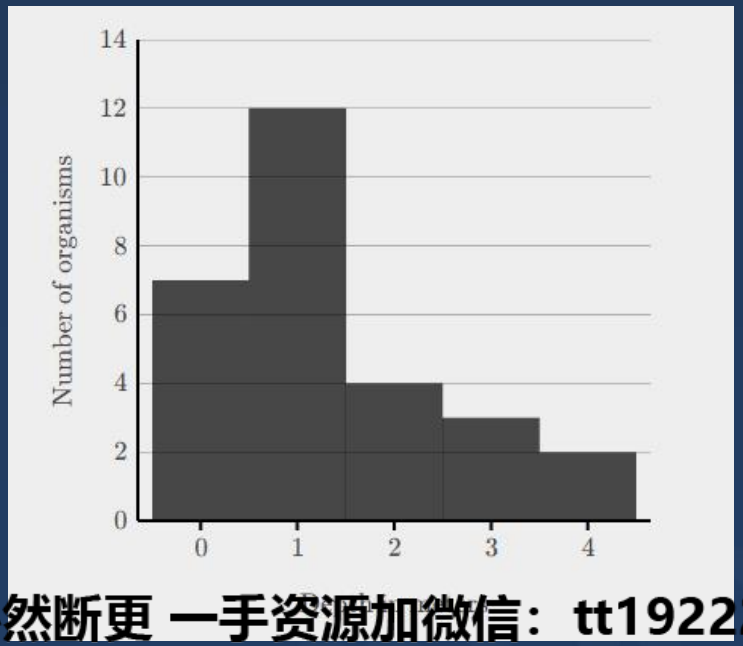
21.Bally tracked the number of living organisms she found at different depths in a pond near her home, as shown in the histogram to the left. What is the range of depths at which Bally found living organisms?

A. 1
B. 4
C. 5
D. 10



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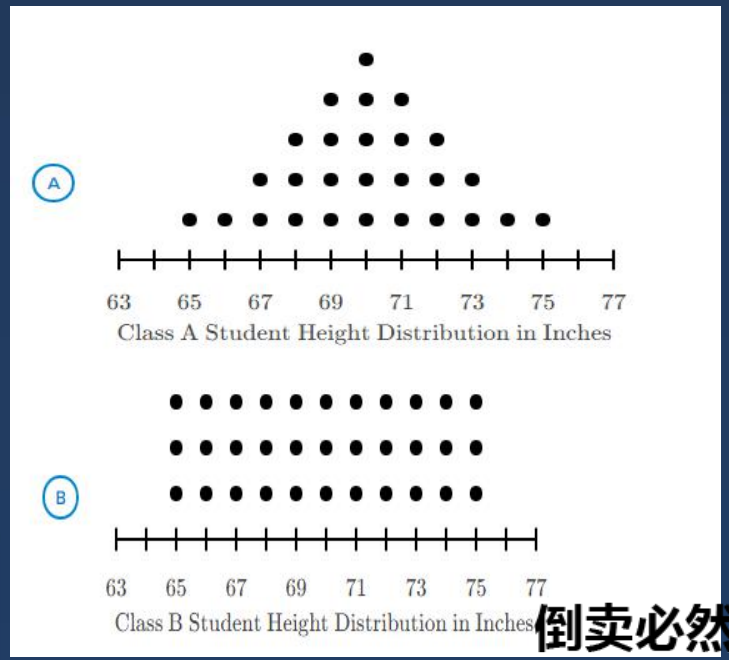
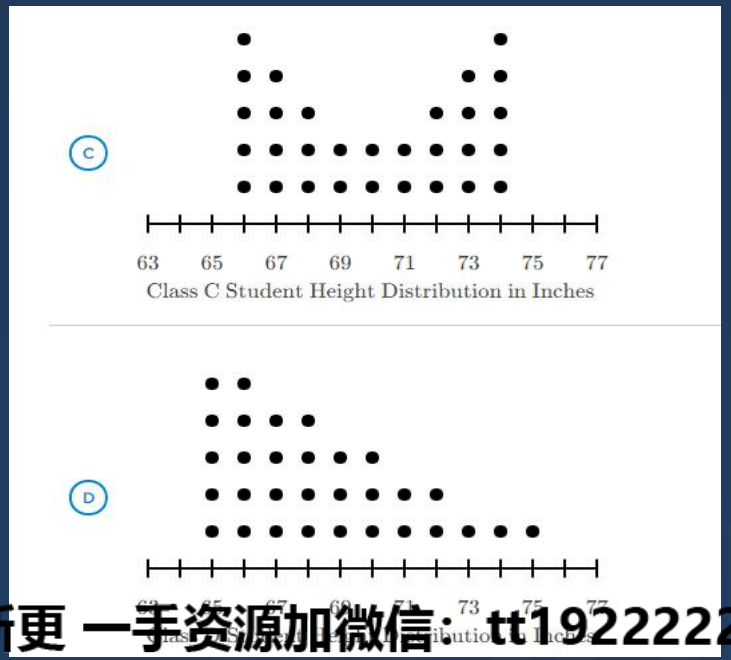
22.The four dot plots below show the student height distributions of four different 11th grade math classes. In which of the data sets is the mean greater than the median?





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23.The table to the left partially records the numbers of pairs of socks manufactured by a company each quarter. If the median of all 9 quarters is 11,830, and the range is the same with and without quarter I, which of the following could be the number of pairs of socks manufactured in quarter I?

A. 8,962
B. 10,816
C. 12,739
D. 15,511

Quarter	Pairs of socks manufactured
A	10,765
B	12,268
C	12,729
D	11,568
E	11,830
F	13,480
G	11,345
H	15,072

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