Practice Together

Khan Academy Assignments

Creating dot plots

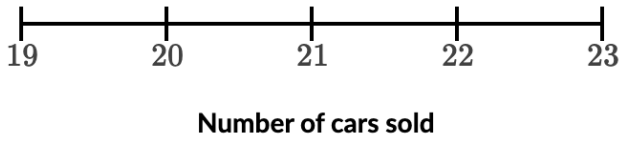
AP Stats: UNC-1 (EU), UNC-1.G (LO), UNC-1.G.3 (EK)
CCSS Math: 6.SP.B.4

Google Classroom Facebook Twitter Email

Tanya is a car saleswoman. Below are the number of cars that she sold in each of the last six months.

$23, 21, 21, 20, 21, 20$

Using this data, create a dot plot where each dot represents a month.



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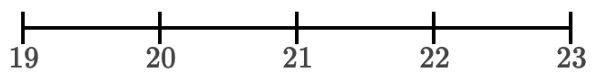

Number of cars sold

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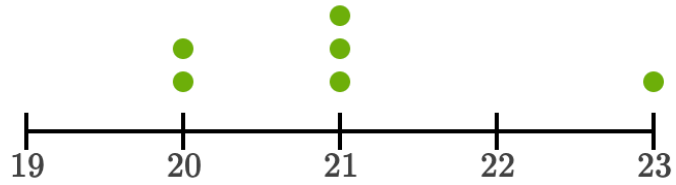

Number of cars sold

Reading dot plots & frequency tables

AP Stats: UNC-1 (EU), UNC-1.G (LO), UNC-1.G.3 (EK)
CCSS Math: 6.SP.A.3, 6.SP.B.4, 6.SP.B.5, 6.SP.B.5a, 6.SP.B.5b

The following frequency table shows the essay scores by students in Mr. Ji's class.

Essay score	Number of students
1	0
2	1
3	4
4	3
5	2
6	1

How many students scored less than or equal to 4 points on their essay?

_____ students

Reading dot plots & frequency tables

AP Stats: UNC-1 (EU), UNC-1.G (LO), UNC-1.G.3 (EK)
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_____ students

1 / 3

Essay score	Number of students
1	0
2	1
3	4
4	3
5	2
6	1
10	1

2 / 3

$0 + 1 + 4 + 3 = ?$

3 / 3

8 students scored less than or equal to 4 points on their essay.

Create histograms

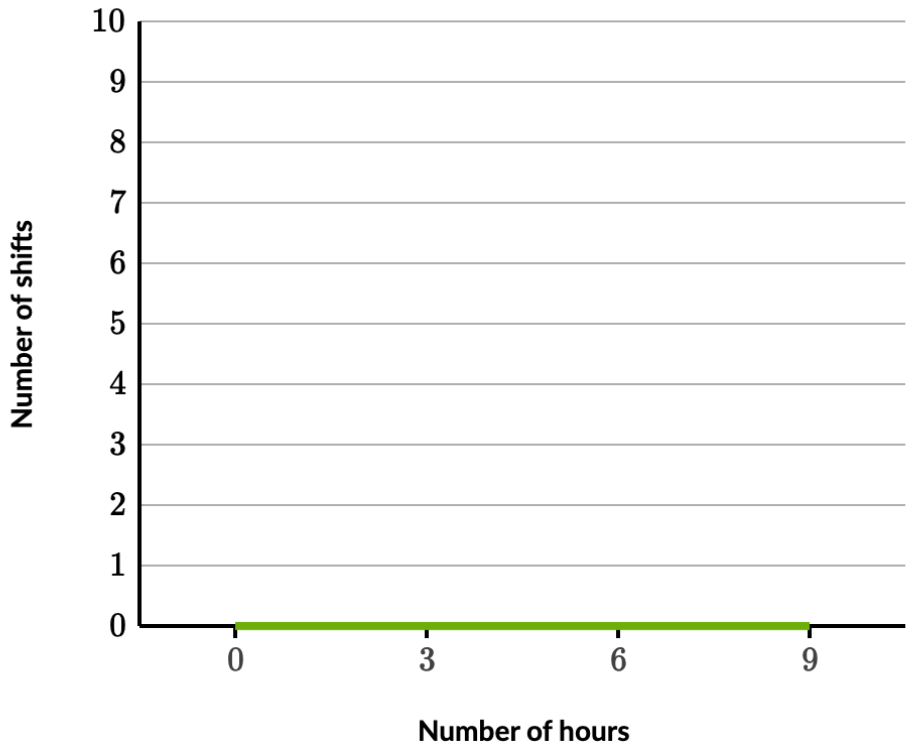
AP Stats: UNC-1 (EU), UNC-1.G (LO), UNC-1.G.1 (EK)
CCSS Math: 6.SP.B.4

Google Classroom Facebook Twitter Email

Below is the number of hours that Trey worked during each of his eight shifts last pay period.

$2.0, 1.8, 4.6, 1.1,$
$7.5, 1.5, 4.0, 1.8$

Using the data, create a histogram.



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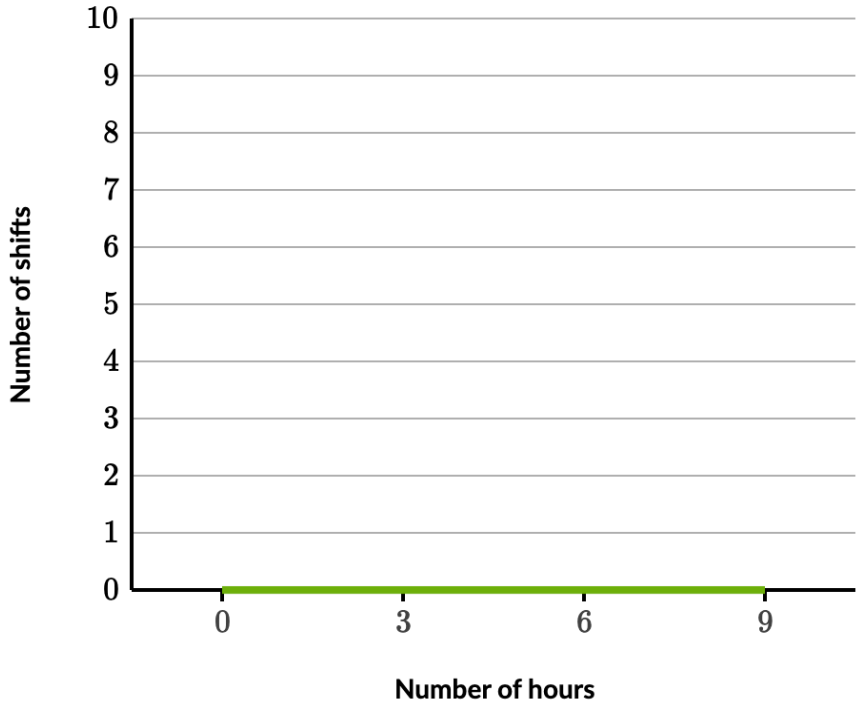


1 / 3

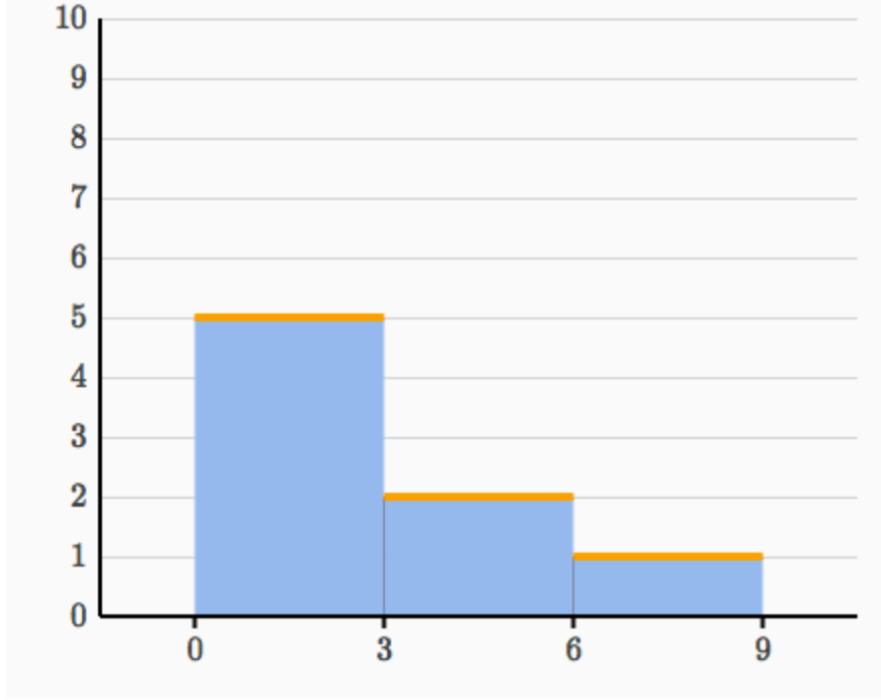
There was 1 shift where Trey worked 7 to 9 hours.

Number of hours worked	Data points	Number of shifts
1 – 3	?	?
4 – 6	?	?
7 – 9	7.5	1

2 / 3

Number of hours worked	Data points	Number of shifts
1 – 3	1.1, 1.5, 1.8, 1.8, 2.0	5
4 – 6	4.0, 4.6	2
7 – 9	7.5	1

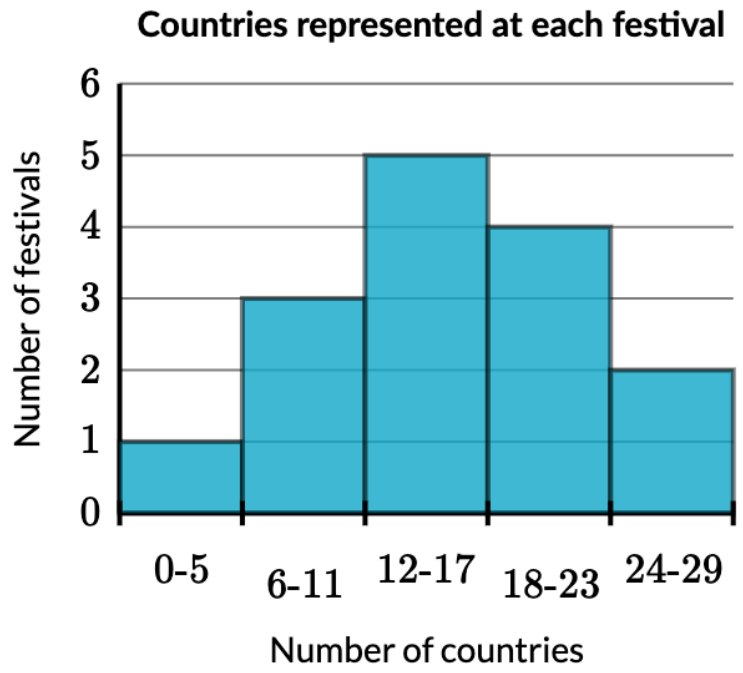
3 / 3



Read histograms

AP Stats: UNC-1 (EU), UNC-1.G (LO), UNC-1.G.1 (EK)
CCSS Math: 6.SP.B.4, 6.SP.B.5, 6.SP.B.5a, 6.SP.B.5b

Google Classroom Facebook Twit



How many festivals were there?

_____ festivals

Read histograms

AP Stats: UNC-1 (EU), UNC-1.G (LO), UNC-1.G.1 (EK)
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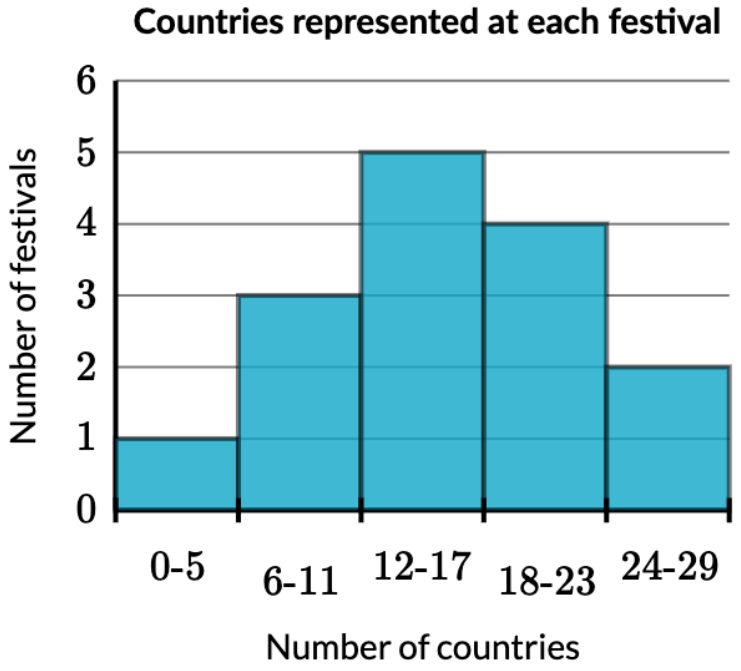
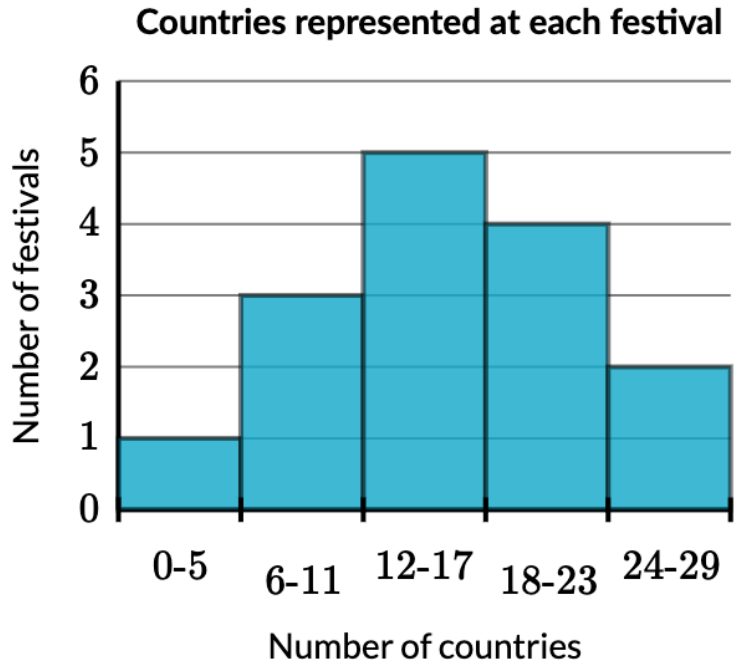


How many festivals were there?

festivals



How many festivals were there?

15 festivals

1 / 2 We simply need to add up the height of each bar.

$1 + 3 + 5 + 4 + 2 = ?$

2 / 2 **There were 15 festivals.**

Shape of distributions

AP Stats: UNC-1 (EU), UNC-1.H (LO), UNC-1.H.3 (EK)
CCSS Math: 6.SP.A.2

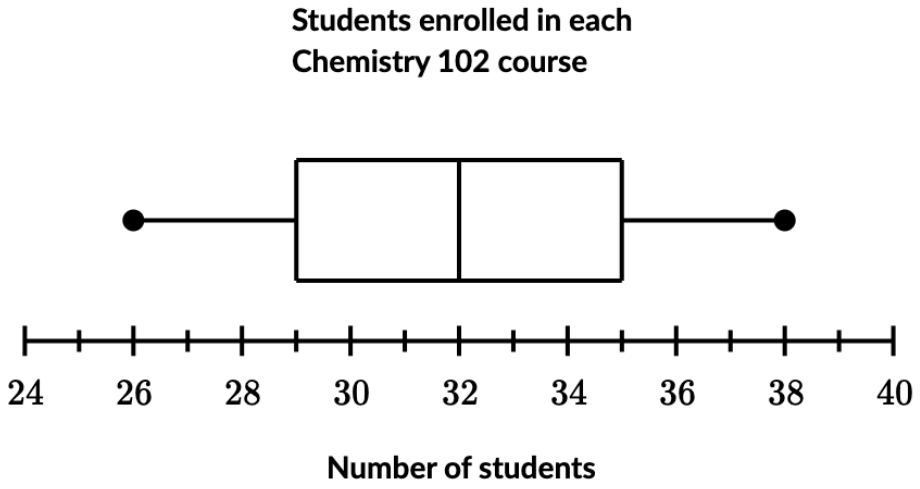
Google Classroom Facebook Twitter Email

What is the shape of the distribution shown below?

Choose 1 answer:

(A) The distribution is symmetrical.

(B) The distribution is not symmetrical.



Shape of distributions

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CCSS Math: 6.SP.A.2

Google Classroom Facebook Twitter Email

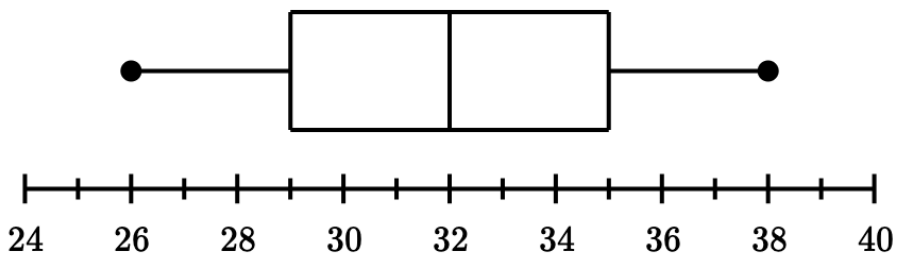
What is the shape of the distribution shown below?

Choose 1 answer:

A The distribution is symmetrical.

B The distribution is not symmetrical.

Students enrolled in each Chemistry 102 course



Number of students

What is the shape of the distribution shown below?

Choose 1 answer:

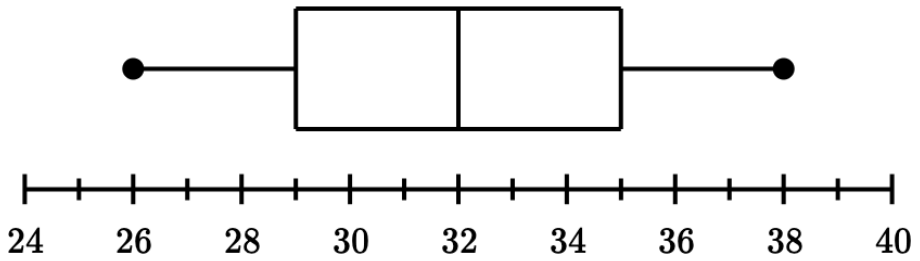
✓ CORRECT (SELECTED)

The distribution is symmetrical.

⊖ INCORRECT

The distribution is not symmetrical.

Students enrolled in each Chemistry 102 course



Number of students

1 / 2 Notice how the left side of the distribution looks like the right side.

2 / 2 **The distribution is symmetrical.**

Mean, median, and mode

CCSS Math: 6.SP.B.5c

Google Classroom Facebook Twitter

What is the median of the following numbers?

$1, 2, 4, 6, 4$

Mean, median, and mode

CCSS Math: 6.SP.B.5c

Google Classroom Facebook Twitter

What is the median of the following numbers?

$1, 2, 4, 6, 4$

What is the median of the following numbers?

$1, 2, 4, 6, 4$

4

1 / 3 First, order the numbers, giving:

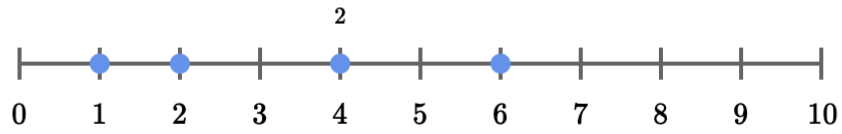
$1, 2, 4, 4, 6$

2 / 3 The median is the 'middle' number:

$1, 2, \mathbf{4}, 4, 6$

3 / 3 **So the median is 4.**

Another way to find the middle number is to draw the numbers on a number line. If a number appears multiple times, count its corresponding dot multiple times.



USE DESMOS!!!

Work smarter not harder…

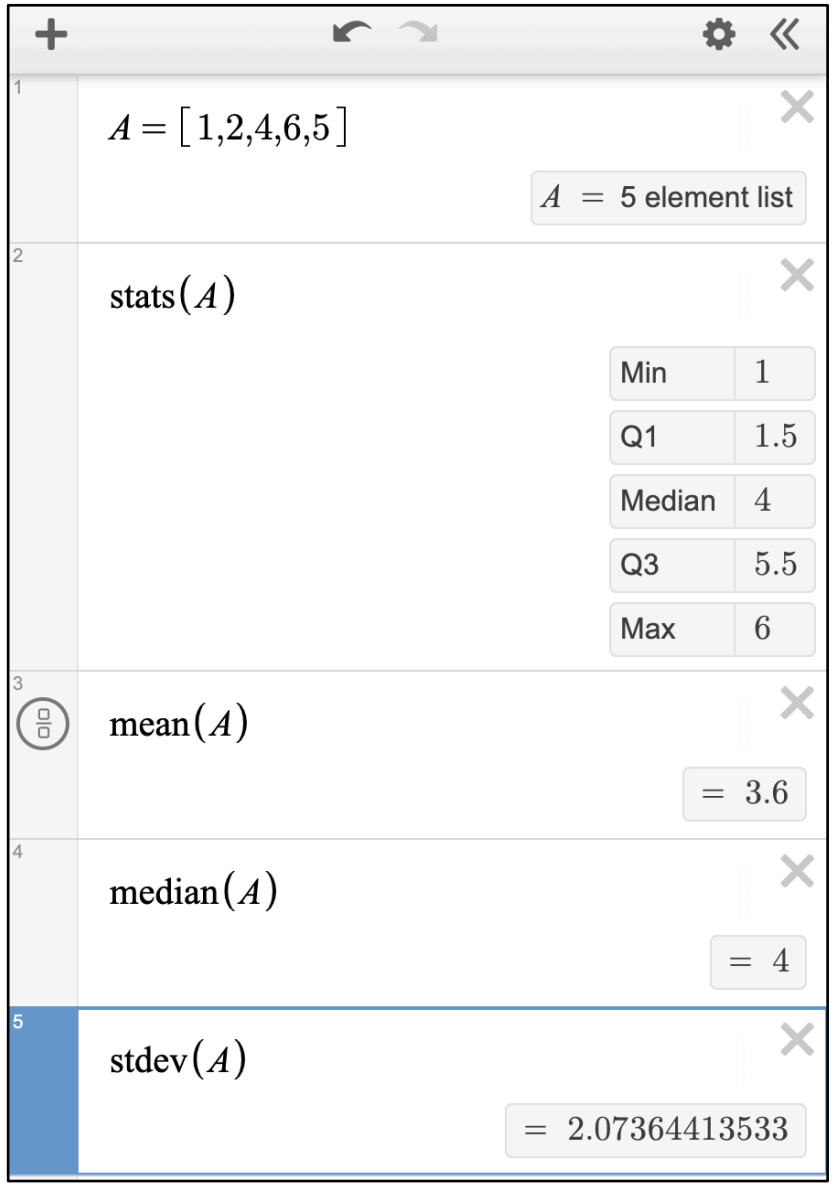
Mean, median, and mode

CCSS Math: 6.SP.B.5c

Google Classroom Facebook Twitter

What is the median of the following numbers?

$1, 2, 4, 6, 4$

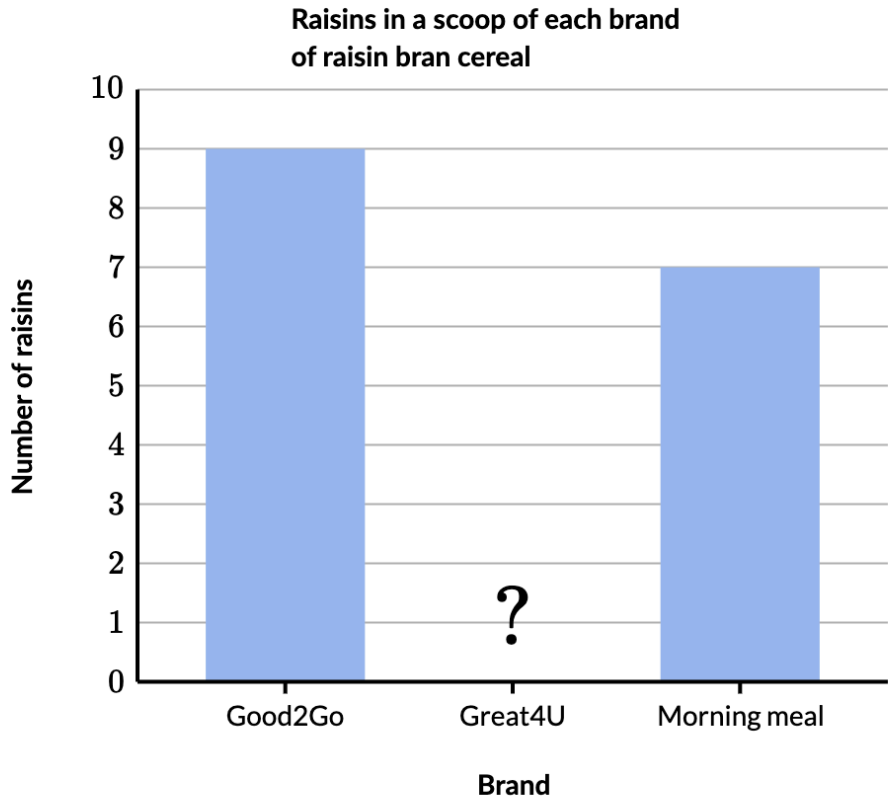


Missing value given the mean

AP Stats: UNC-1 (EU), UNC-1.I (LO), UNC-1.I.2 (EK)
CCSS Math: 6.SP.B.5, 6.SP.B.5c

Google Classroom Facebook Twitter Email

You might need: Calculator



If the mean of the data set is 7 raisins, find the number of raisins in each scoop of Great4U.

raisins

Missing value given the mean

AP Stats: UNC-1 (EU), UNC-1.I (LO), UNC-1.I.2 (EK)
CCSS Math: 6.SP.B.5, 6.SP.B.5c

Google Classroom Facebook Twitter Email

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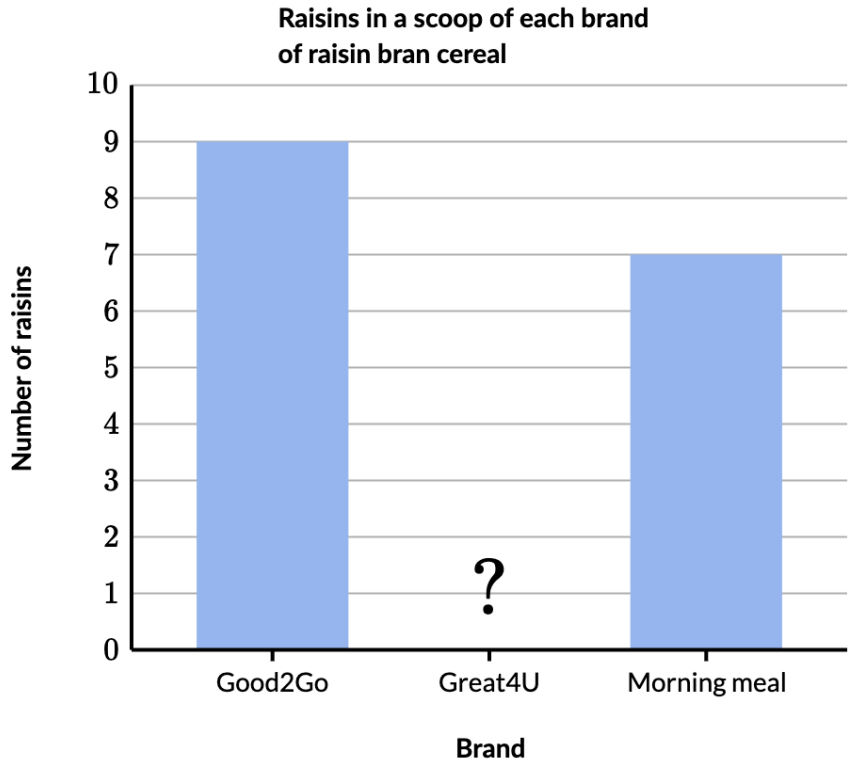

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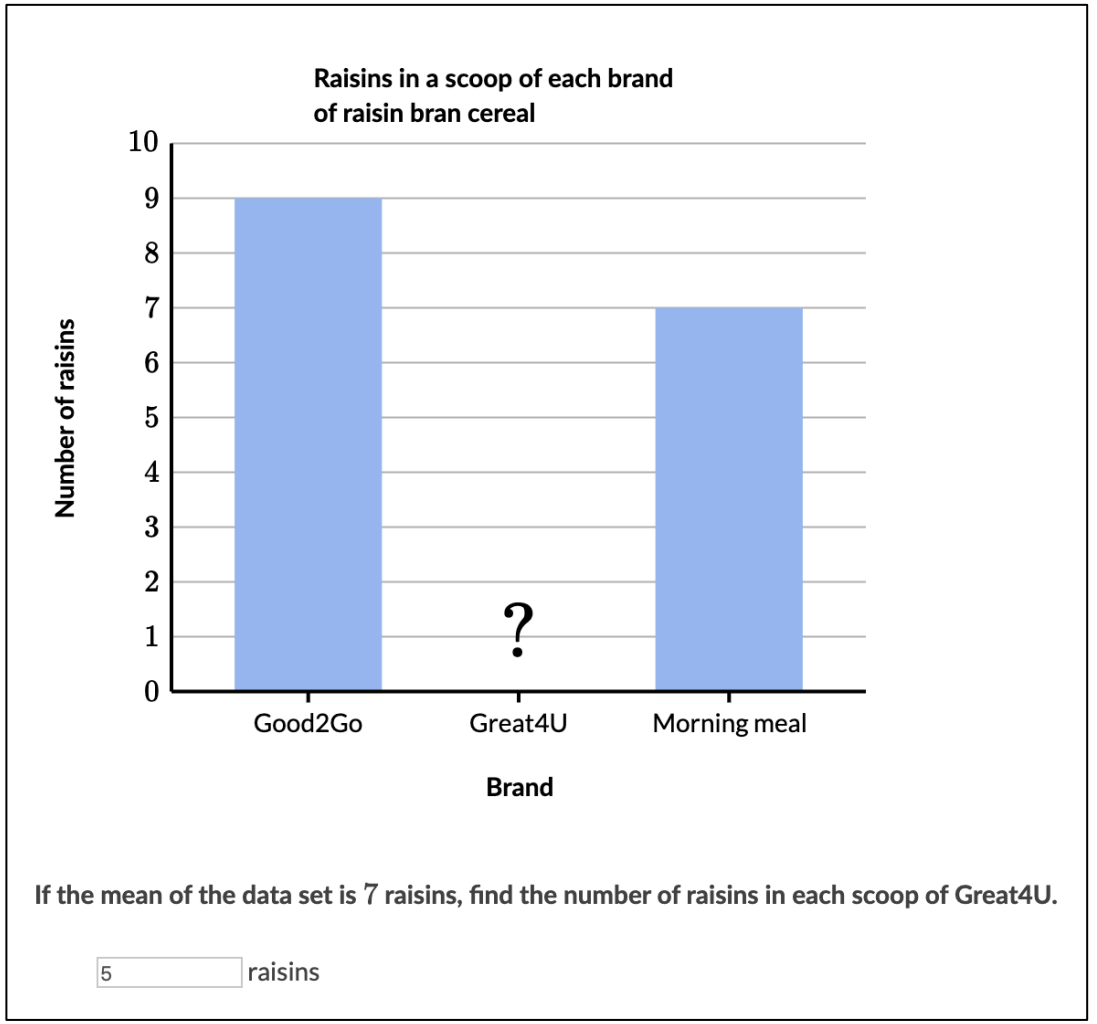
raisins



If the mean of the data set is 7 raisins, find the number of raisins in each scoop of Great4U.

5 raisins

$$\frac{9 + x + 7}{3} = 7$$

Chucky grabbed 12 items in the grocery store that each had a different price and had a mean cost of about $\$7.41$. One of the items was an entire wheel of cheese that cost $\$39.99$. *[Show data]*

Chucky then decided to put the wheel of cheese back and only buy the other 11 items.

How will removing the wheel of cheese affect the mean and median?

Choose 1 answer:

(A) Both the mean and median will decrease, but the median will decrease by more than the mean.

(B) Both the mean and median will decrease, but the mean will decrease by more than the median.

(C) Both the mean and median will increase, but the median will increase by more than the mean.

(D) Both the mean and median will increase, but the mean will increase by more than the median.

Item	Cost
elephant garlic	$\$1.29$
Italian parsley	$\$1.92$
Kosher salt	$\$3.19$
bulgur wheat	$\$3.79$
matzoh meal	$\$3.99$
Anjou pears	$\$4.79$
tahini	$\$5.19$
mozzarella pearls	$\$5.29$
clam stock	$\$5.49$
rose water	$\$6.75$
beef tongue	$\$7.19$
gorgonzola cheese wheel	$\$39.99$

How will removing the wheel of cheese affect the mean and median?

Choose 1 answer:

INCORRECT

Both the mean and median will decrease, but the median will decrease by more than the mean.

CORRECT (SELECTED)

Both the mean and median will decrease, but the mean will decrease by more than the median.

INCORRECT

Both the mean and median will increase, but the median will increase by more than the mean.

INCORRECT

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1 / 3

Removing the wheel of cheese will decrease the median a little bit, because the median shifts from between two data points to the lower of the two data points. *[Okay, I'm good]*

With the wheel of cheese...

The median is the middle number... but there's no middle number in this data set! So, to find the median we take the mean of the two middle numbers, $\$4.79$ and $\$5.19$, which is $\$4.99$.

Without the wheel of cheese...

The middle number is now $\$4.79$, so the median is $\$4.79$.

USE DESMOS!!! Work smarter not harder...

Removing the wheel of cheese will decrease the mean significantly, because the total cost will decrease by $\$39.99$, and the number of items decreases by only 1. *[Okay, I'm good]*

Here's how we calculate the mean:

$$\text{mean} = \frac{\text{total cost}}{\text{number of items}}$$

With the wheel of cheese...

$$\text{mean} = \frac{\$39.99 + \$1.29 + \$1.92 + \$3.19 + \$3.79 + \ldots}{12}$$

$$= \frac{\$88.87}{12}$$

$$\approx \$7.41$$

Without the wheel of cheese...

$$\text{mean} = \frac{\$1.29 + \$1.92 + \$3.19 + \$3.79 + \$3.99 + \ldots}{11}$$

$$= \frac{\$48.88}{11}$$

$$\approx \$4.44$$

Both the mean and median will decrease, but the mean will decrease more than the median.

Creating box plots

AP Stats: UNC-1 (EU), UNC-1.L (LO), UNC-1.L.1 (EK), UNC-1.L.2 (EK)
CCSS Math: 6.SP.B.4

Google Classroom Facebook Twitter Email

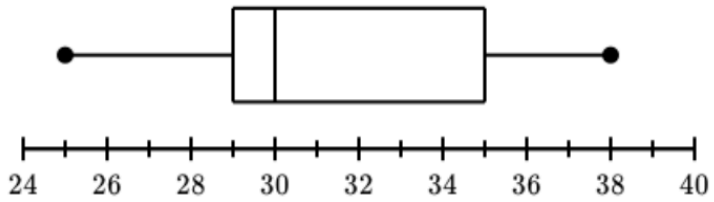
The data below represents the number of practices each member of Nidhi's ski team attended.

$25, 28, 29, 29, 30, 34, 35, 35, 37, 38$

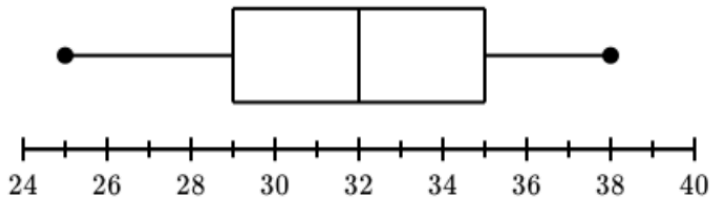
Which box plot correctly summarizes the data?

Choose 1 answer:

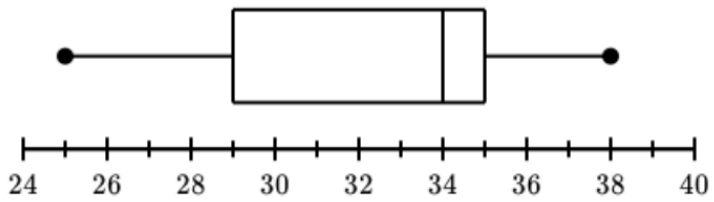
(A)



(B)



(C)



Creating box plots

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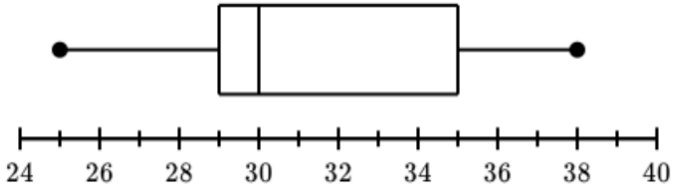
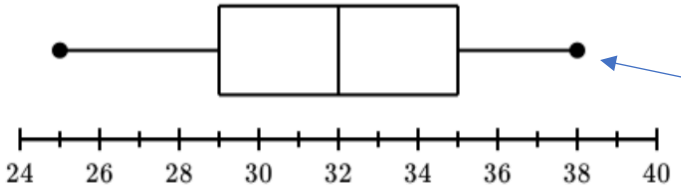
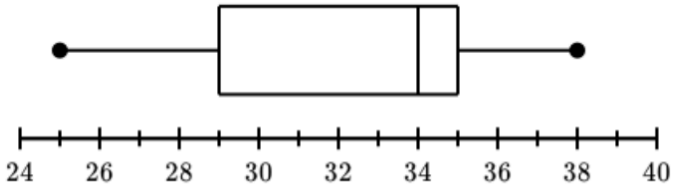


B



C



1
$A = [25,28,29,29,30,34,35,35,37,38]$

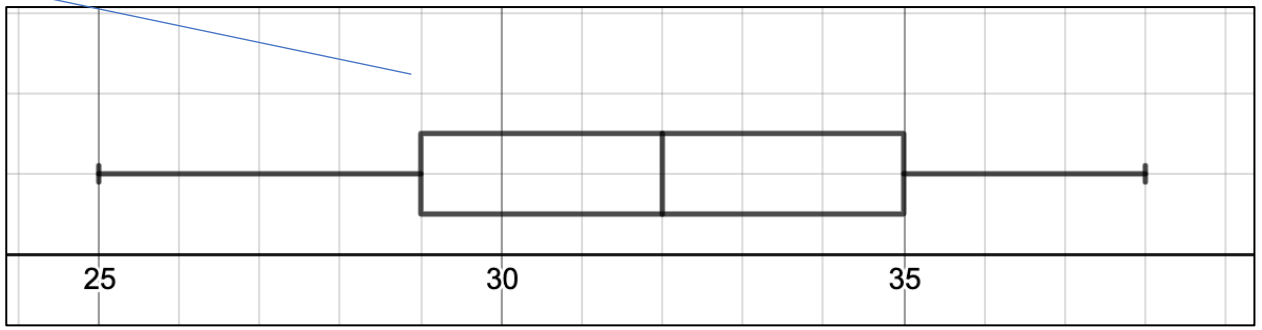
A = 10 element list

2
boxplot(A)

DISPLAY PROPERTIES
Offset: 1 Height: 1

3
stats(A)

Min	25
Q1	29
Median	32
Q3	35
Max	38



reating box plots

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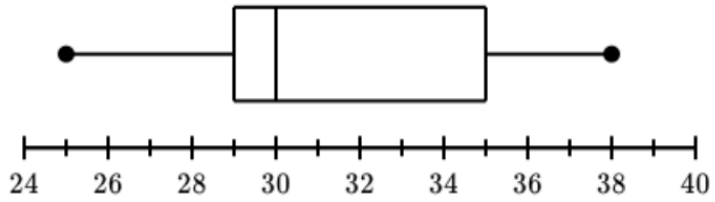

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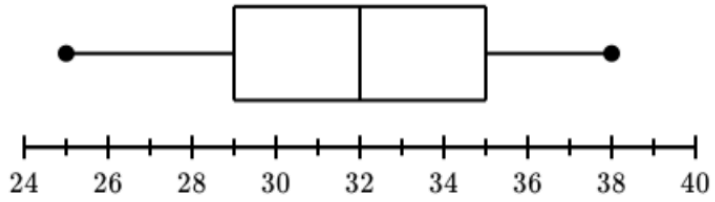
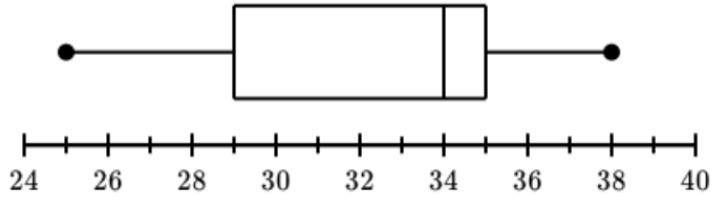


(C)



1 / 3

$25, 28, 29, 29, 30 \vdots 34, 35, 35, 37, 38$

$\text{Min} = 25$

$\text{Median} = \frac{30 + 34}{2} = 32$

$\text{Max} = 38$

2 / 3

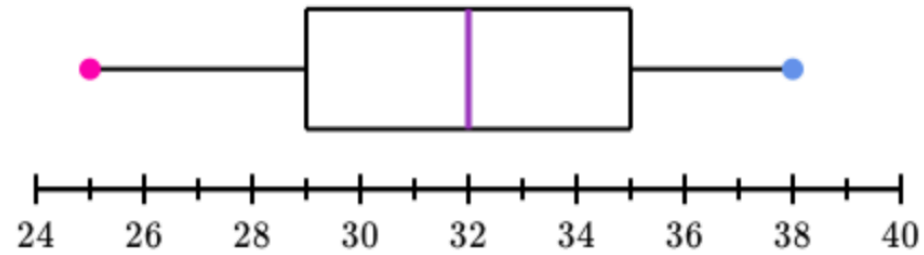
$25, 28, 29, 29, 30 \vdots 34, 35, 35, 37, 38$

$Q_1 = 29$

$Q_3 = 35$

3 / 3

The following box plot correctly summarizes the data.



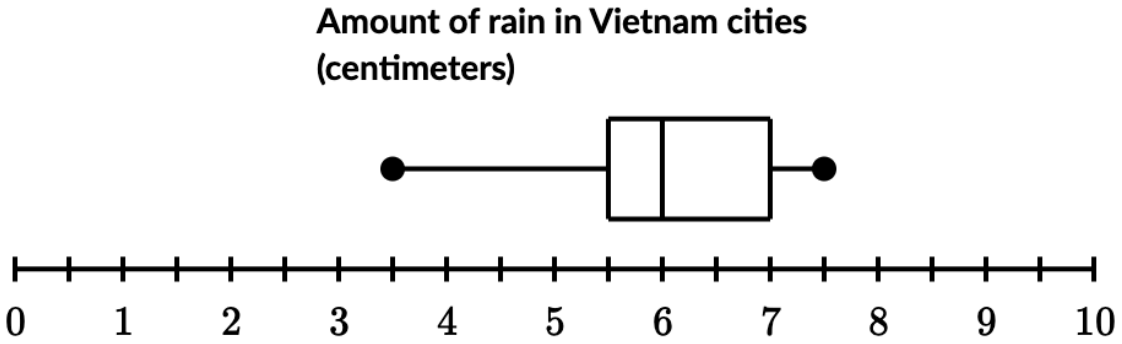
Reading box plots

AP Stats: UNC-1 (EU), UNC-1.L (LO), UNC-1.L.1 (EK), UNC-1.L.2 (EK)
CCSS Math: 6.SP.A.2, 6.SP.B.4, 6.SP.B.5, 6.SP.B.5c

Google Classroom Facebook Twitter Email

Find the median of the data in the box plot below.

_____ cm



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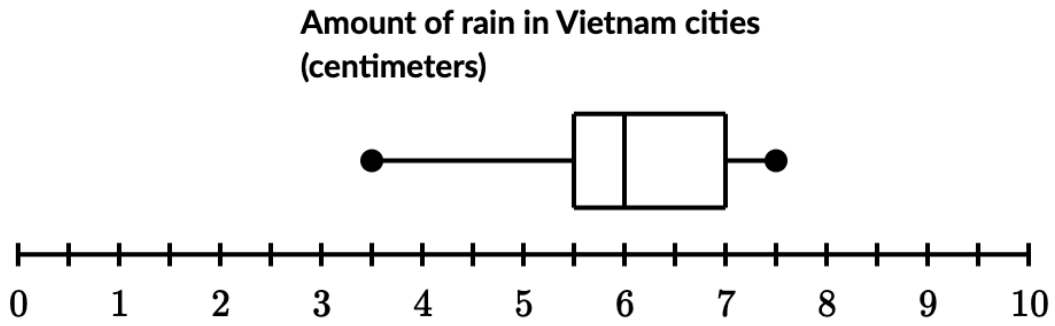
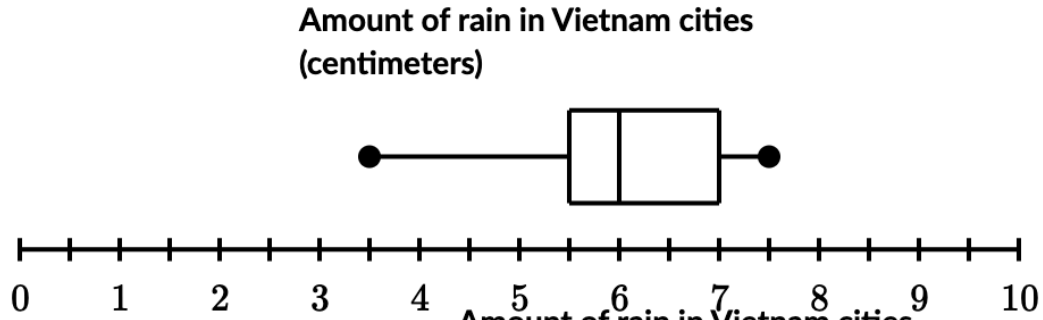
Find the median of the data in the box plot below.

cm

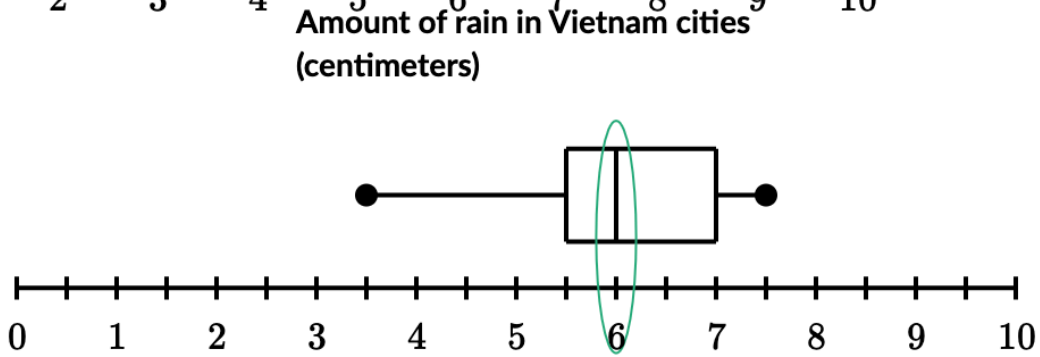


Find the median of the data in the box plot below.

6 cm



1 / 2



2 / 2 The median is 6 cm.

Interpreting quartiles

AP Stats: UNC-1 (EU), UNC-1.L (LO), UNC-1.L.1 (EK), UNC-1.L.2 (EK)
CCSS Math: 6.SP.B.5, 6.SP.B.5c

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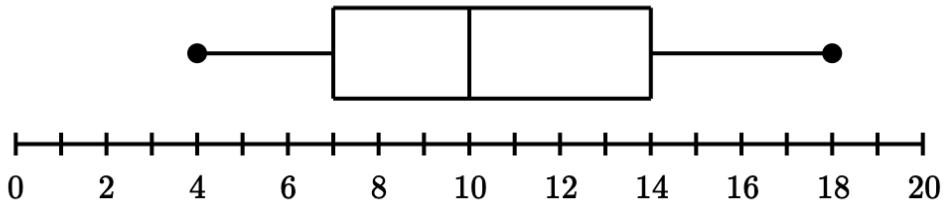
Number of teams in each of Brad's fantasy football leagues



About what percent of Brad's fantasy football leagues have fewer than 7 teams?

Choose 1 answer:

(A) 0%

(B) 25%

(C) 50%

(D) 75%

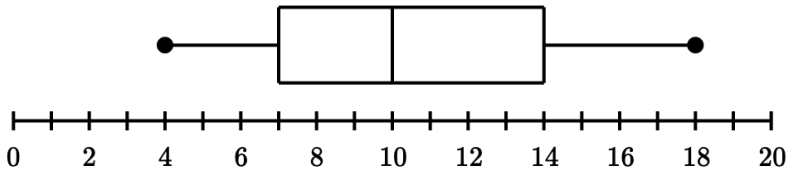
(E) 100%

Interpreting quartiles

AP Stats: UNC-1 (EU), UNC-1.L (LO), UNC-1.L.1 (EK), UNC-1.L.2 (EK)
CCSS Math: 6.SP.B.5, 6.SP.B.5c

Google Classroom Facebook Twitter Email

Number of teams in each of Brad's fantasy football leagues



About what percent of Brad's fantasy football leagues have fewer than 7 teams?

Choose 1 answer:

(A) 0%

(B) 25%

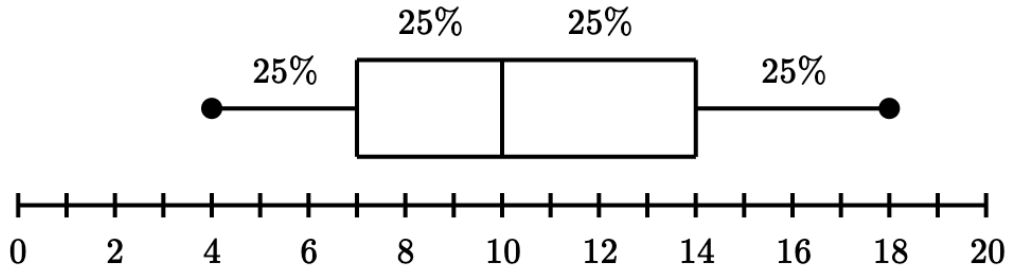
CORRECT (SELECTED)
25%

(C) 50%

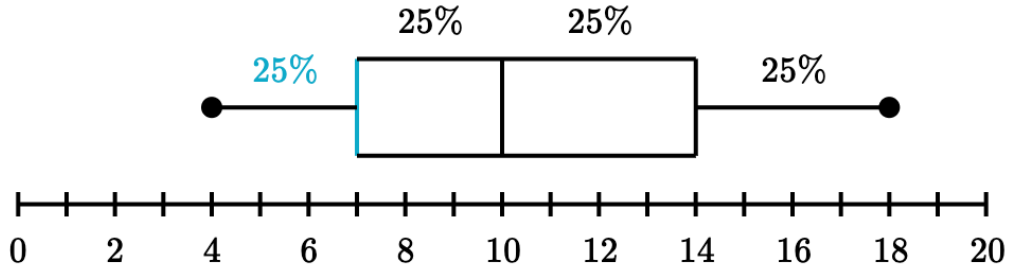
(D) 75%

(E) 100%

1 / 3 Quartiles divide the data into 4 groups that each contain about 25% of the data.



2 / 3



3 / 3 **About 25% of Brad's fantasy football leagues have fewer than 7 teams.**

Comparing distributions

AP Stats: UNC-1 (EU), UNC-1.N (LO), UNC-1.N.1 (EK), UNC-1.O (LO), UNC-1.O.1 (EK)
CCSS Math: 7.SP.B.3, 7.SP.B.4

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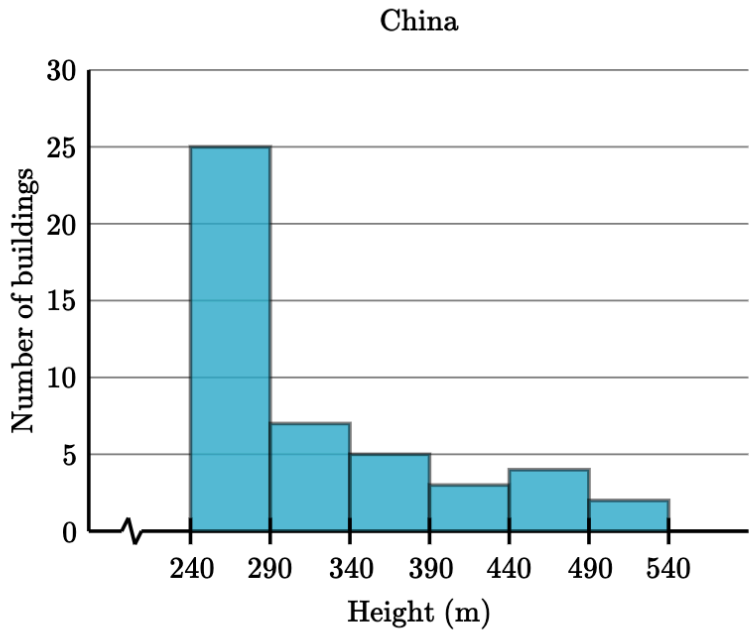
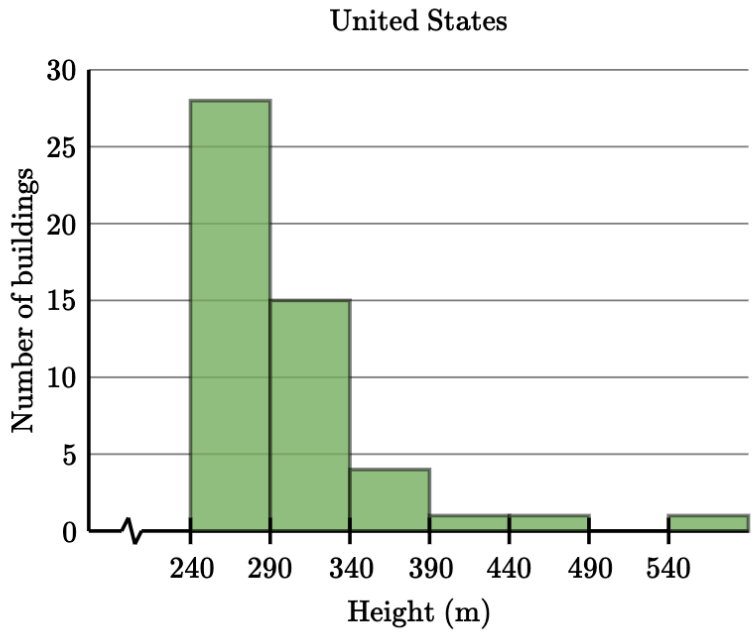
The histograms below show the heights (in meters) of the tallest buildings in China and the United States.

Which pieces of information can be gathered from these histograms?

Choose all answers that apply:

- (A) The United States has the tallest building of these two countries.
- (B) China has more buildings over 390 meters tall.
- (C) None of the above





Which pieces of information can be gathered from these histograms?

Choose all answers that apply:

CORRECT (SELECTED)

The United States has the tallest building of these two countries.

CORRECT (SELECTED)

China has more buildings over 390 meters tall.

INCORRECT

None of the above

1 / 3 Let's consider the **first answer choice:**

The United States has the tallest building of these two countries.

We can see that the tallest building in the United States is between 540 and 590 meters tall, and all of China's tallest buildings are below those heights.

So the United States has the tallest building of these two countries.

2 / 3 Now, let's consider the **second answer choice:**

China has more buildings over 390 meters tall.

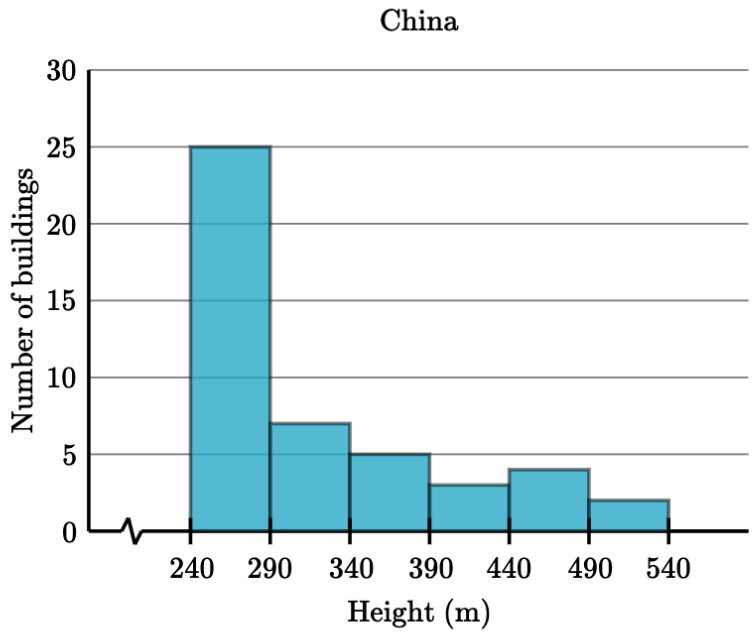
We can count that China has $3 + 4 + 2 = 9$ buildings over 390 meters tall, and the United States has $1 + 1 + 1 = 3$ buildings over 390 meters tall.

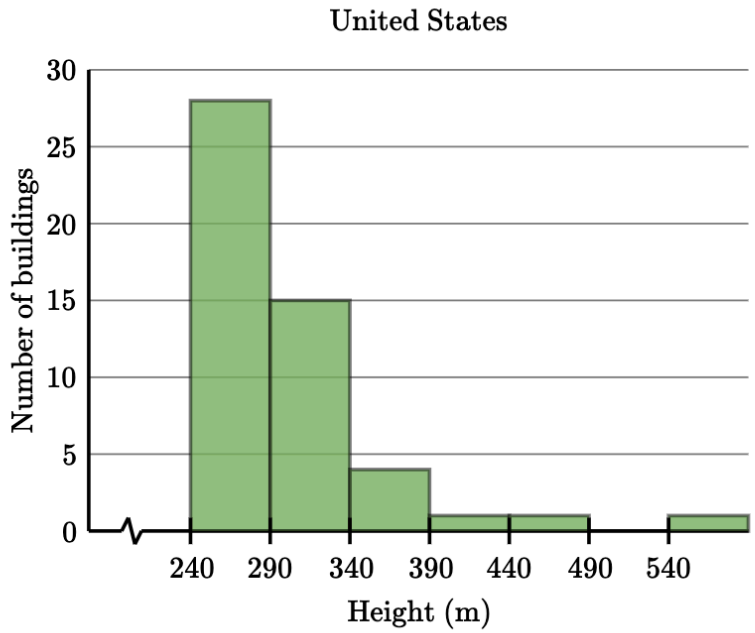
So China has more buildings over 390 meters tall.

3 / 3 **Select these answers:**

The U.S. has the tallest building of these two countries.

China has more buildings over 390 meters tall.





Estimating mean and median in data displays

AP Stats: UNC-1 (EU), UNC-1.M (LO), UNC-1.M.2 (EK)

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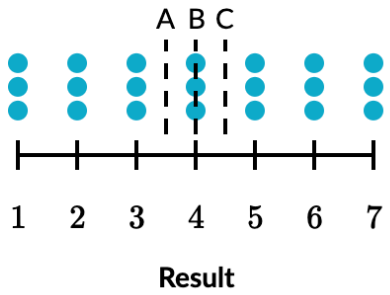
Geraldo asked 21 friends to pick a random number between 1 and 7. Here are their responses:



The approximate location of the median is point A/B/C

The approximate location of the mean is point A/B/C

Estimating mean and median in data displays

AP Stats: UNC-1 (EU), UNC-1.M (LO), UNC-1.M.2 (EK)

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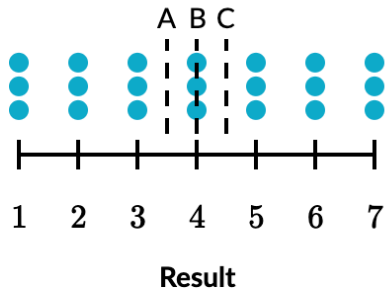
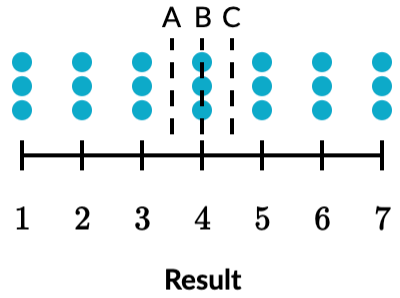


The approximate location of the median is point A/B/C

The approximate location of the mean is point A/B/C

Geraldo asked 21 friends to pick a random number between 1 and 7. Here are their responses:



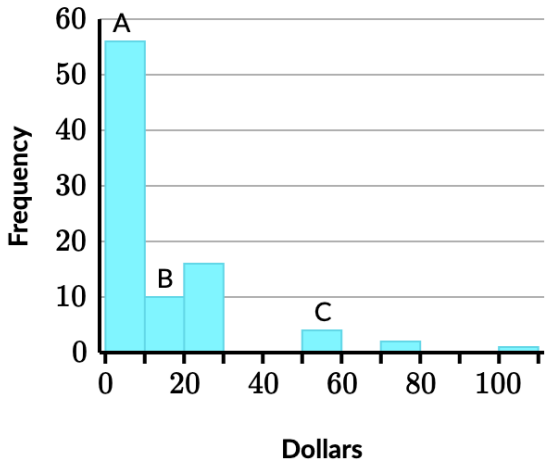
The approximate location of the median is point B

The approximate location of the mean is point B

Estimating mean and median in data displays

AP Stats: UNC-1 (EU), UNC-1.M (LO), UNC-1.M.2 (EK)

Researchers asked a sample of 96 teenagers how much cash they currently had with them. Here histogram showing their results:



The approximate location of the median is in interval A/B/C

The approximate location of the mean is in interval A/B/C

Estimating mean and median in data displays

AP Stats: UNC-1 (EU), UNC-1.M (LO), UNC-1.M.2 (EK)

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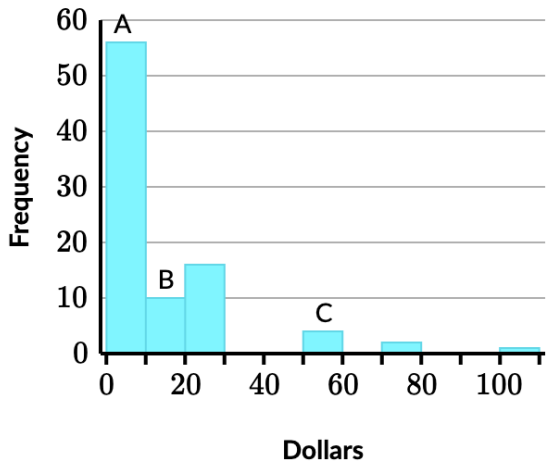
Researchers asked a sample of 96 teenagers how much cash they currently had with them. Here histogram showing their results:



The approximate location of the median is in interval A

The approximate location of the mean is in interval B

Locating the median

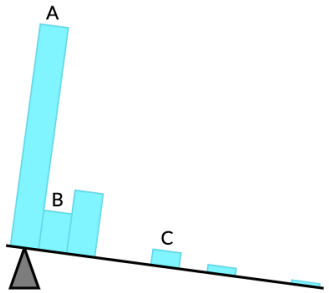
There are 96 data points (teenagers) in this distribution, so the median will be between the 48^{th} and 49^{th} data points.

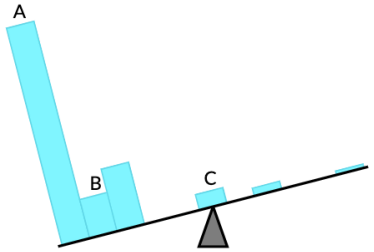
There are more than 50 data points in the first interval (interval A), so it must contain the median.

Locating the mean

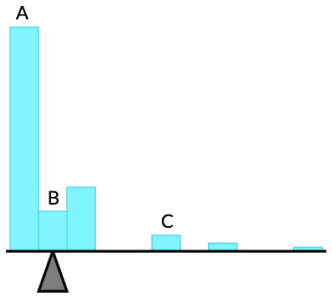
The distribution is skewed to the right, so the mean will likely be greater than the median.

The distribution wouldn't balance at interval A or C.





The approximate location of the mean is in interval B.



Interquartile range (IQR)

AP Stats: UNC-1 (EU), UNC-1.J (LO), UNC-1.J.1 (EK), UNC-1.J.2 (EK)
CCSS Math: 6.SP.B.5, 6.SP.B.5c

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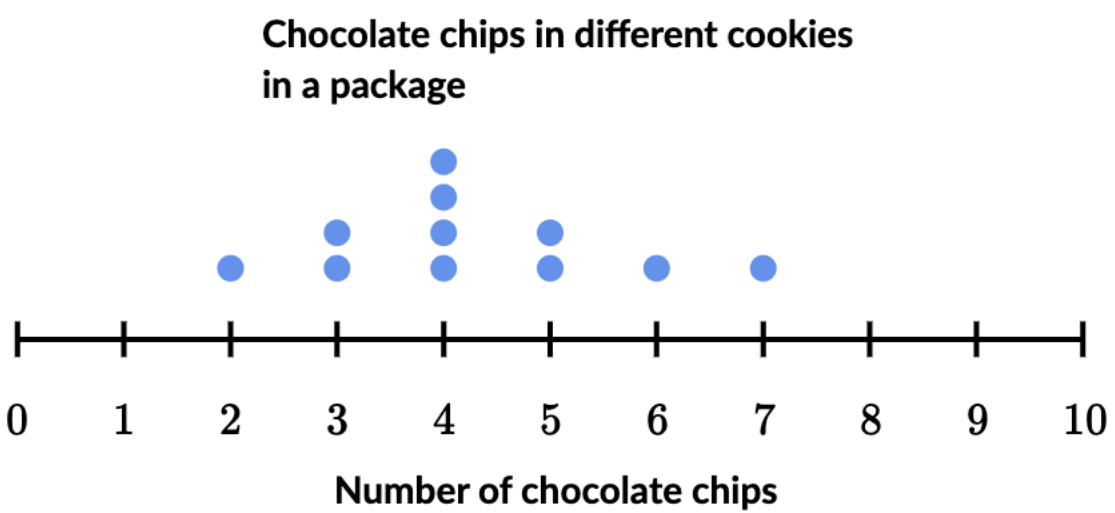
Find the interquartile range (IQR) of the data in the dot plot below.

_____ chocolate chips



Interquartile range (IQR)

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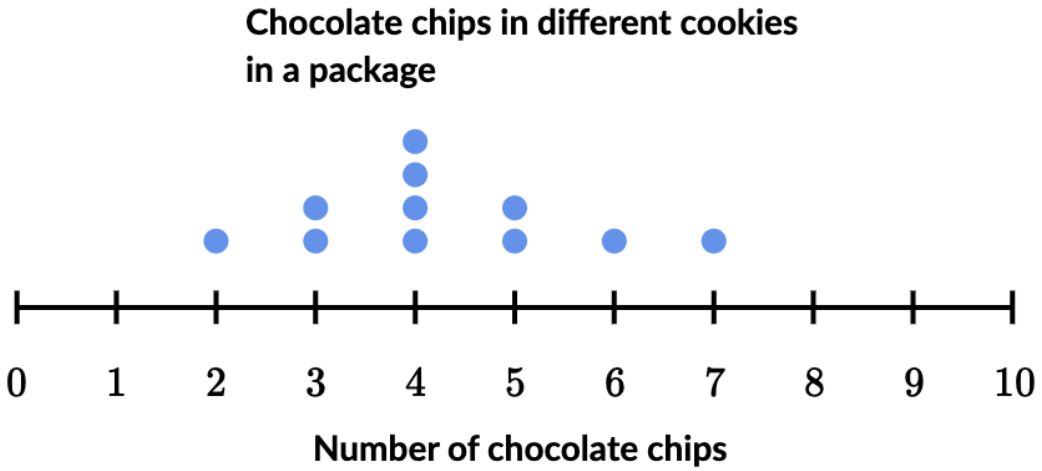
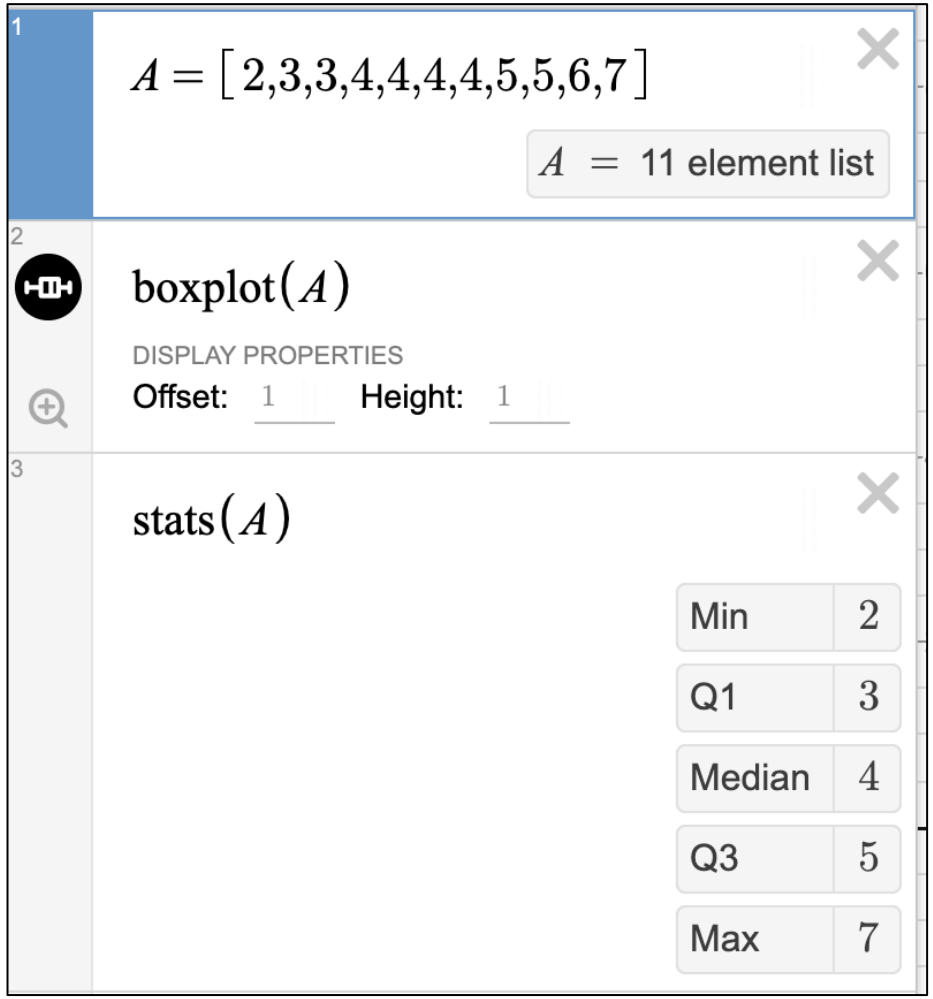


{2, 3, 3, 4, 4, 4, 4, 5, 5, 6, 7}



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Google Classroom Facebook Twitter Email

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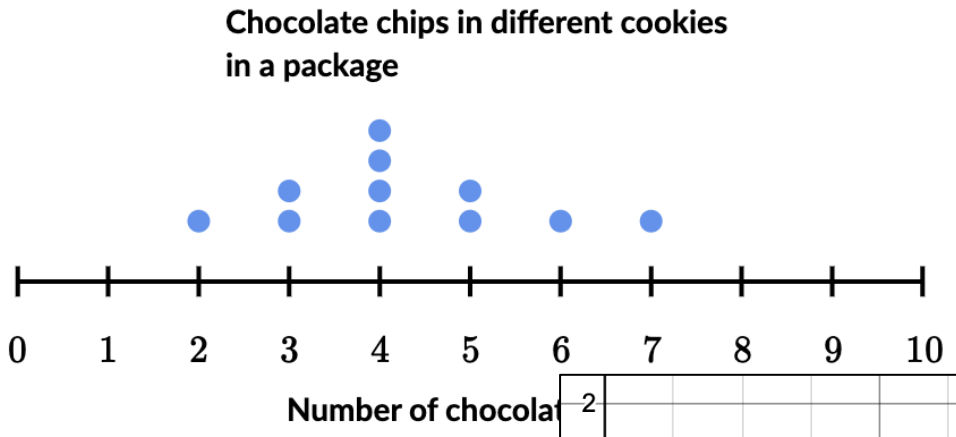
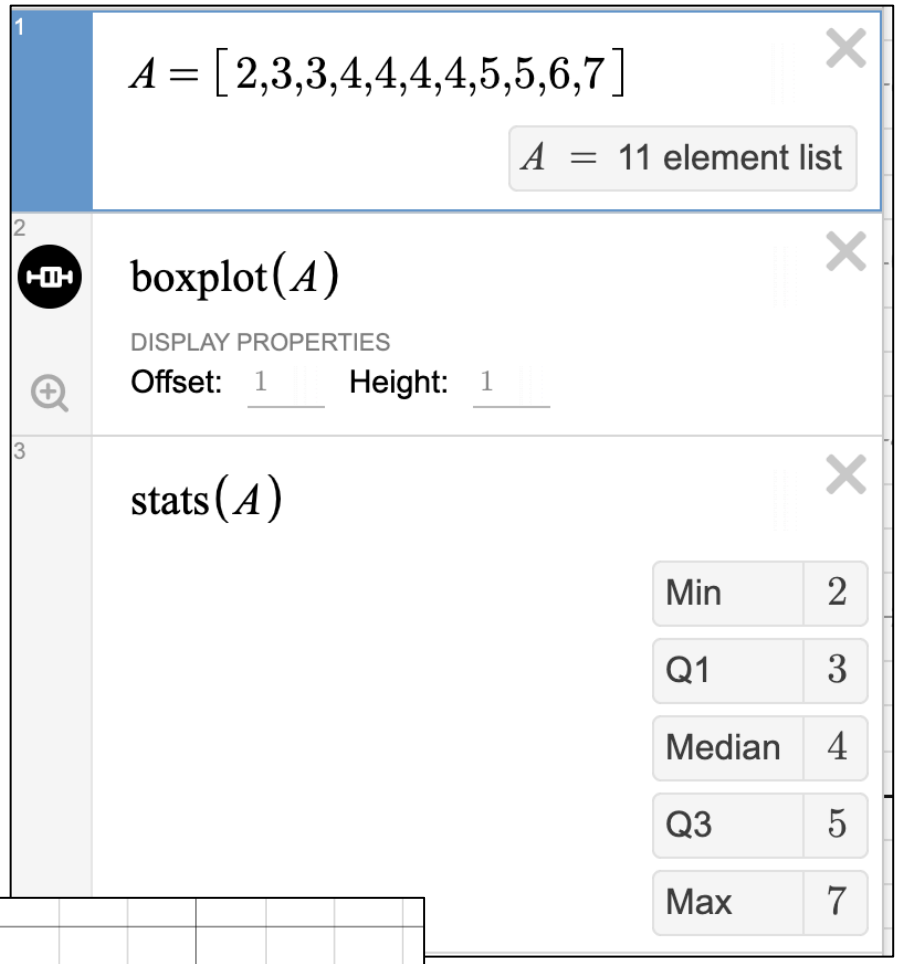
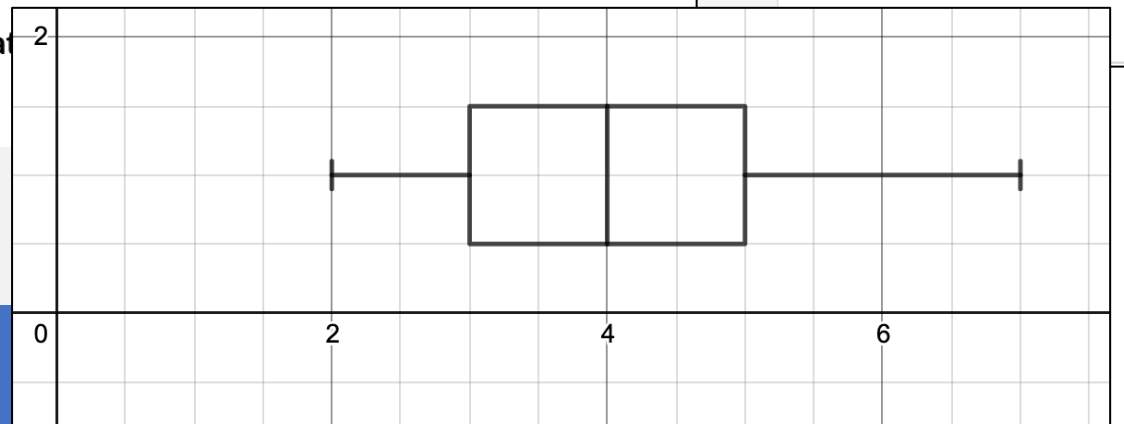
chocolate chips



{2, 3, 3, 4, 4, 4, 4, 5, 5, 6, 7}





Interquartile range (IQR)

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CCSS Math: 6.SP.B.5, 6.SP.B.5c

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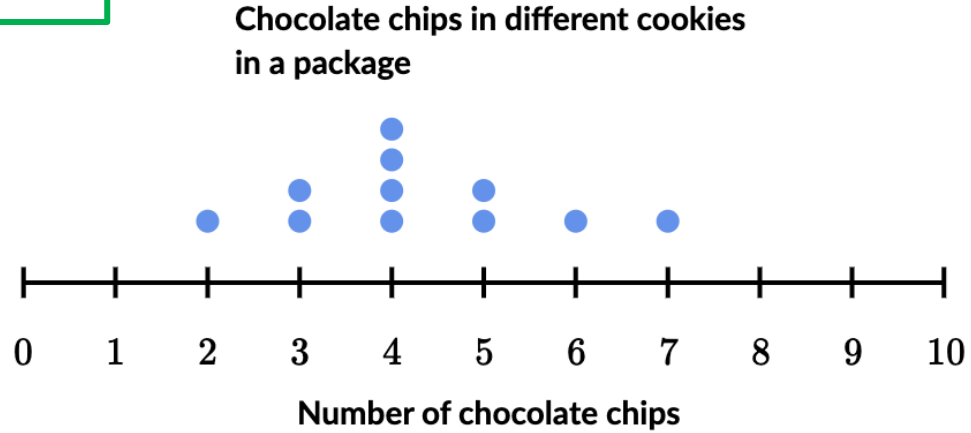
Find the interquartile range (IQR) of the data in the dot plot below.

$= 2$ chocolate chips



{2, 3, 3, 4, 4, 4, 4, 5, 5, 6, 7}

1 / 5 $\text{IQR} = Q_3 - Q_1$

2 / 5 To find the quartiles, let's first find the median by sorting the data points from least to greatest.

$2, 3, 3, 4, 4, \mathbf{4}, 4, 5, 5, 6, 7$

The median is 4.

3 / 5 The first quartile is the median of the data points to the *left* of the median.

$2, 3, \mathbf{3}, 4, 4$

$Q_1 = 3$

4 / 5 The third quartile is the median of the data points to the *right* of the median.

$4, 5, \mathbf{5}, 6, 7$

$Q_3 = 5$

5 / 5 $\text{IQR} = Q_3 - Q_1$

$= 5 - 3$

$= 2$