Name:_____ Class:_____ Date:_____

Learning Target: I can organize and represent data using tables, dot plots, line plots, bar graphs, histograms and box plots.

Do Now

Directions: Determine the following measures from the data set shown below.

{6, 1, 3, 8, 5, 11, 1, 5}

Order the data:_____

Median = _____

Q1 = _____

Q3 = _____

IQR = _____

Name:_____ Class:_____ Date:_____

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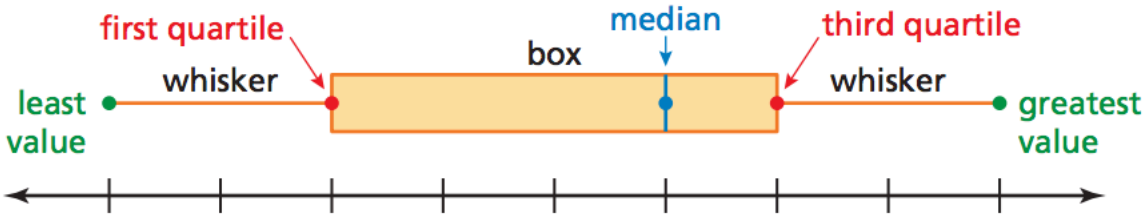
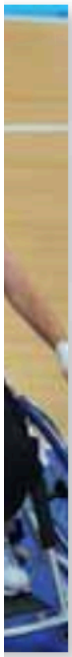
Box and Whisker Plots/Box Plots

Box-and-Whisker Plot

A **box-and-whisker plot** displays a data set along a number line using medians. **Quartiles** divide the data set into four equal parts. The median (second quartile) divides the data set into two halves. The median of the lower half is the first quartile. The median of the upper half is the third quartile.

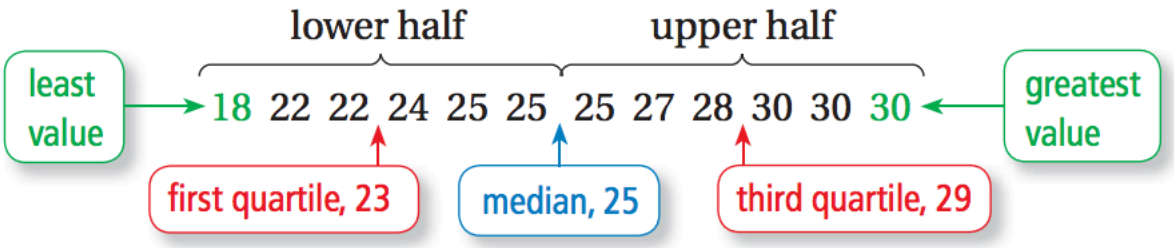




Make a box-and-whisker plot for the ages of the members of the 2008 U.S. women's wheelchair basketball team.

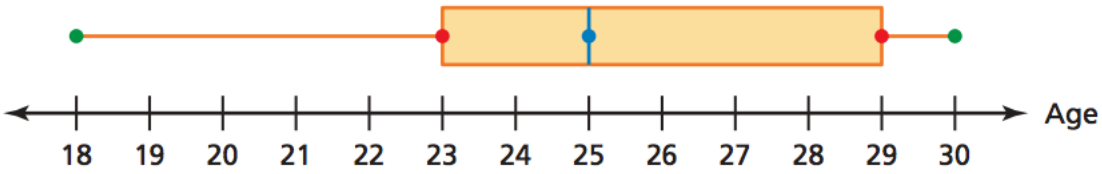
24, 30, 30, 22, 25, 22, 18, 25, 28, 30, 25, 27

Step 1: Order the data. Find the median and the quartiles.



Step 2: Draw a number line that includes the least and greatest values. Graph points above the number line for the least value, greatest value, median, first quartile, and third quartile.

Step 3: Draw a box using the quartiles. Draw a line through the median. Draw whiskers from the box to the least and greatest values.



EXAMPLE 1 Making a Box-and-Whisker Plot

To make a box-and-whisker plot of the roller coaster heights given above, first find the median. Then find the lower and upper quartiles.

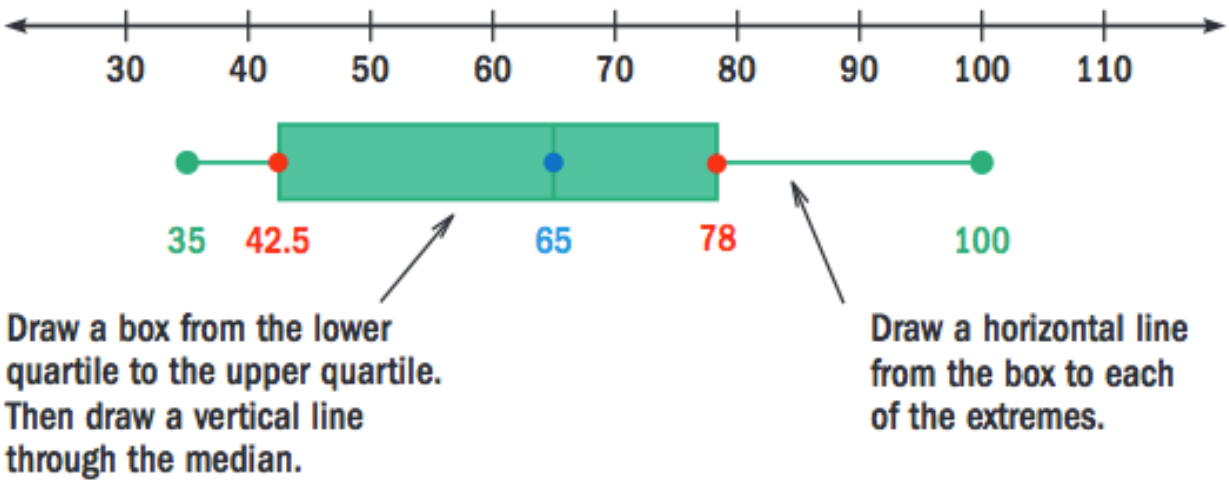
$$\text{Median} = \frac{60 + 70}{2} = 65$$

Lower half | Upper half

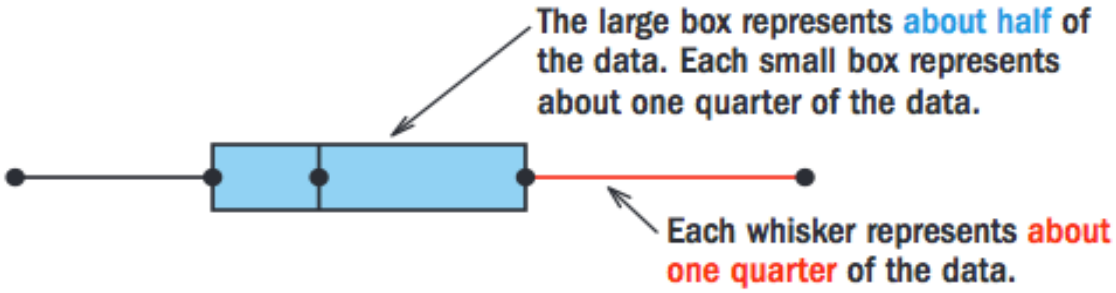
35 42 42.5 60 60 | 70 76 78 81 100

Lower quartile = 42.5 **Upper quartile = 78**

Plot the lower extreme, lower quartile, median, upper quartile, and upper extreme using a number line.

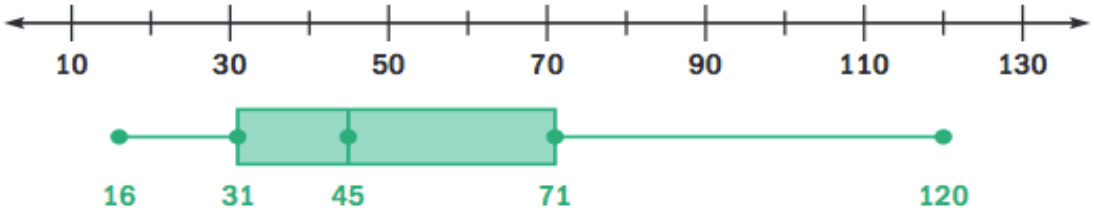


Interpreting a Box-and-Whisker Plot A box-and-whisker plot helps to show how varied, or spread out, the data are.



EXAMPLE 2 Interpreting a Box-and-Whisker Plot

Watches The prices of the watches at a store are displayed in the box-and-whisker plot below.



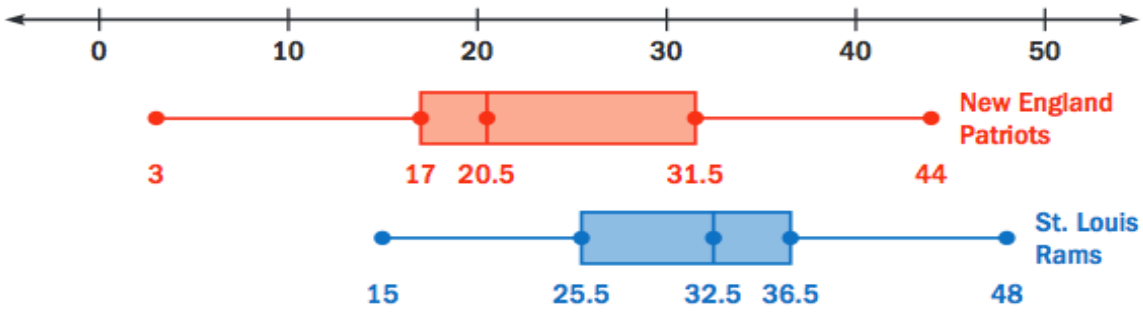
a. If all of the watches under $31 are on clearance, then about what fraction of the watches are on clearance?

---

b. If all of the watches from $31 to $71 are on sale, then about what fraction of the watches are on sale?

EXAMPLE 3 Comparing Box-and-Whisker Plots

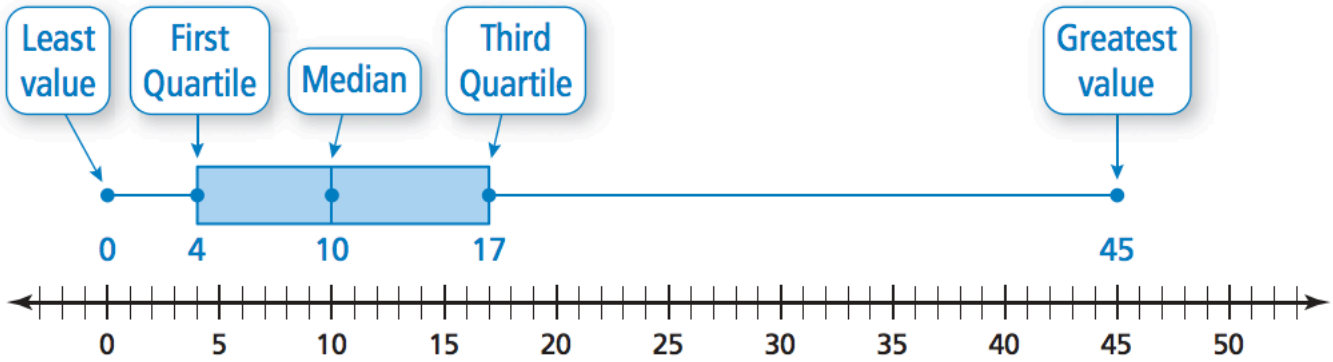
Football The box-and-whisker plots below represent the number of points scored in each game of the 2001–2002 season for the New England Patriots and the St. Louis Rams. What conclusions can you make about the data?



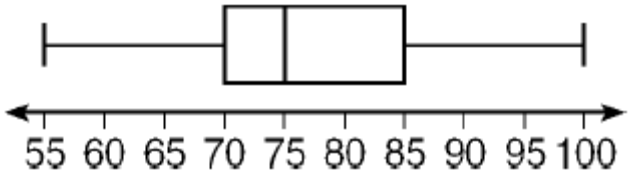
Name:_____ Class:_____ Date:_____

Learning Target: I can organize and represent data using tables, dot plots, line plots, bar graphs, histograms and box plots.

Box and Whisker Plots/Box Plots



Directions: The accompanying box-and-whisker plot represents the scores earned on a math test. Use it to answer questions a – e.



_____ a) What is the median score?
(1) 75 (2) 70 (3) 85 (4) 77

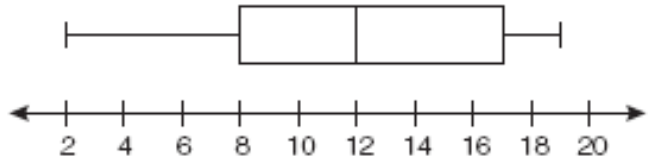
_____ b) What score represents the first quartile?
(1) 55 (2) 70 (3) 100 (4) 75

_____ c) What statement is *not* true about the box and whisker plot shown?
(1) 75 represents the mean score (3) 85 represents the 3rd quartile
(2) 100 represents the maximum score (4) 55 represents the minimum score

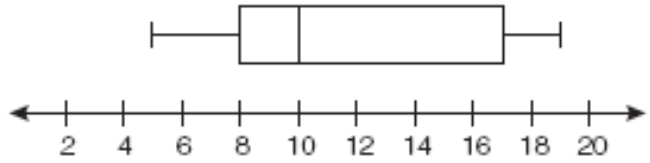
_____ d) A score of an 85 on the box-and-whisker plot shown refers to:
(1) the third quartile (3) the maximum score
(2) the median (4) the mean

_____ e) The data set 5, 6, 7, 8, 9, 9, 9, 10, 12, 14, 17, 17, 18, 19, 19 represents the number of hours spent on the Internet in a week by students in a mathematics class. Which box-and-whisker plot represents the data?

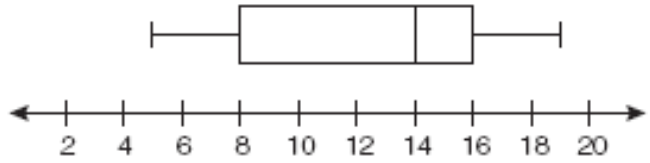
(1)



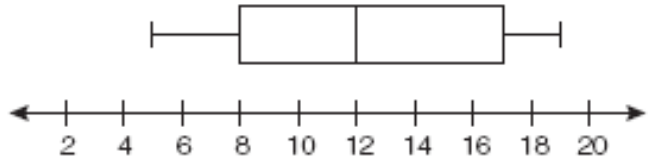
(2)



(3)



(4)

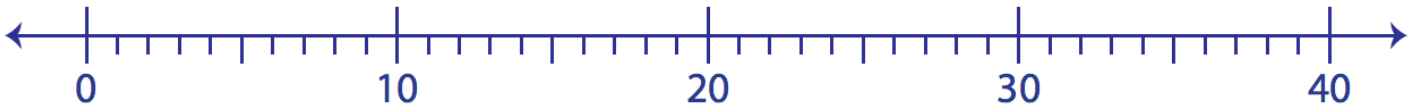


f) Create a box plot from the following data: 17, 29, 32, 9, 30, 14, 8, 39, 11, 32, 23

Order the data from least to greatest: _____

Minimum: _____ Median:_____ Maximum:_____

Q1:	Q3:



Readiness	**Positive Contribution**	**Understanding**
☐ Arrived to class on time ☐ Actively worked on the do now ☐ Completed the do now	☐ Followed along with class notes ☐ Followed teacher instructions	☐ Correctly answered the five multiple choice questions
/10	**/30**	**/60**

Comments:

Grade:_____

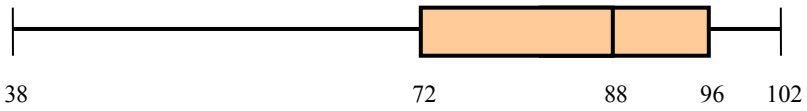
Name:_____ Class:_____ Date:_____

Learning Target: I can organize and represent data using tables, dot plots, line plots, bar graphs, histograms and box plots.

Box and Whisker Plots/Box Plots

Directions: Answer the questions below based on the box plot "Test Scores (as %) for 6th period"

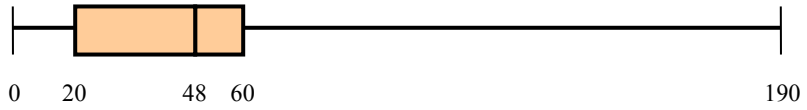
Test Scores (as %) for 6th Period



1. What was the high score on the test? _____
2. What percent of the class scored above a 72? _____
3. What was the median score on the test? _____
4. What percent of the class scored between 88 & 96?_____

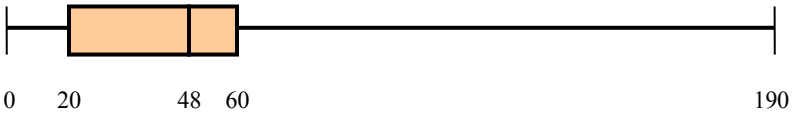
Answer the questions below based on the box plot, "Average minutes per night spent on Homework"

Average Minutes Per Night Spent On Homework

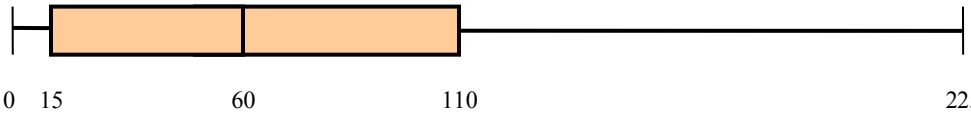


5. What percent of the students spend more than 60 minutes on homework per night? _____
6. What is the range of the amount of minutes per night spent on homework? _____
7. What is the IQR of the data? _____

TV & Homework Minutes per Night



Homework Time



TV Time

8. What percent of the sophomores watch TV for at least 15 minutes per night?_____

9. What is the 3rd quartile for the TV time data? _____

10. What is the range for the average minutes spent watching TV per night? _____

11. Is the median greater for TV time or HW time? _____