Box and Whisker Plot and Histogram Spreadsheet

Team Stats

BLUE TEAM

Minimum: _____	Mean: _____	25th %-tile: _____
Maximum: _____	Mode: _____	Median: _____
Range: _____		75th %-tile: _____

Sketch the histogram	Sketch the box and whisker plot

GREEN TEAM

Minimum: _____	Mean: _____	25th %-tile: _____
Maximum: _____	Mode: _____	Median: _____
Range: _____		75th %-tile: _____

Sketch the histogram	Sketch the box and whisker plot

RED TEAM

Minimum: _____	Mean: _____	25th %-tile: _____
Maximum: _____	Mode: _____	Median: _____
Range: _____		75th %-tile: _____

Sketch the histogram	Sketch the box and whisker plot

Go Team!

Use the terms in the word bank below to complete the statements about the statistics and graphic representations in your spreadsheet. Each term can be used only once.
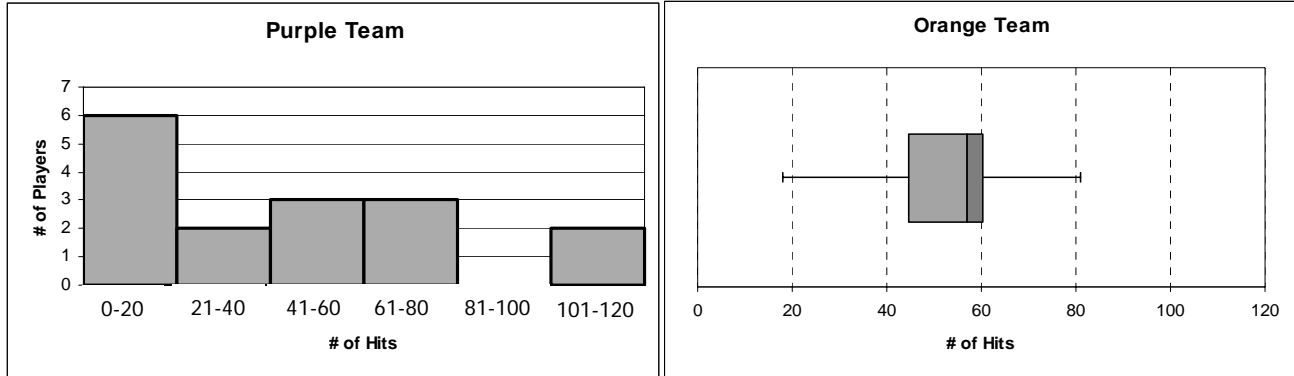
median	Red	mode	Blue
Green	range	outlier	mean

1. The box and whisker plot of the _____ Team has the longest whisker. This

   is usually an indication that the set of data contains at least one _____ .

2. The _____ of the data is the central tendency for which the graphic

   representations give us the least information.

3. The graphic representation with the smallest box (on the box and whisker plot)

   or with the middle bars significantly taller than the outer bars (on the histogram)

   for the _____ Team reflects the fact that the number of hits for many of

   the players on that team is close to the _____.

4. While the data for each of the three teams is very different, the _____

   number of hits is the same for all.

5. The _____ and Red Teams both have players with more than 100 hits.

6. The _____ of the number of hits was the smallest for the Green Team.

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7. If you had the opportunity to join any of these teams for next season, which would it be? Explain using statistics and/or the graphical representation(s) to justify your selection.

Purple or Orange? (hard copy of Microsoft Word file)

Below are graphical representations of the number of hits last season by members of the Purple and Orange teams.

Purple Team

# of Players

7
6
5
4
3
2
1
0

0-20   21-40   41-60   61-80   81-100   101-120

# of Hits

Orange Team

0   20   40   60   80   100   120

# of Hits

Hard Hitting Harold (H³ for short) has offers to join both the Purple team and the Orange team. H³ had 100 hits last season.

As a local sports reporter, you have received the task of analyzing the impact for each team, should H³ join either the Purple or the Orange team. You must base your analysis on what you can gather from the graphical representations you have received.

Use either a word processor to create a newsletter or presentation software to create a slide show that will communicate your interpretations. Copy and paste the graphical representations into your newsletter or slide show and use the drawing tools to help make your points.
Your newsletter or slide show should answer the following questions.

1. From the given graphical representations, what do you know about the spread of the data (numbers of hits per player) for the Purple team? for the Orange team? (Include a "discussion" of any clusters, gaps, and/or outliers.)

2. Should H³ join the team, how would his number of hits (100) impact the current spread of the data for the Purple team? for the Orange team?

3. From the given graphical representations, what do you know about the current range, median, and mean number of hits for the Purple team? for the Orange team?

4. Should H³ join the team, what would be the impact on the range, median, and mean number of hits for the Purple team? for the Orange team?

5. In your opinion, which team would benefit the most from having H³ join their team?

6. As an added note or disclaimer, compare and contrast the amount and type of information you were able to get from the histogram versus the box and whisker plot when you addressed questions #1 and 3. What information might you get from a histogram that you would not get from a box and whisker plot? What information might you get from a box and whisker plot that you would not get from a histogram?

Pure Gold

You have just been hired as the manager of the Gold Team. A plot of the number of RBIs (runs batted in) of your team is shown below.

Gold Team
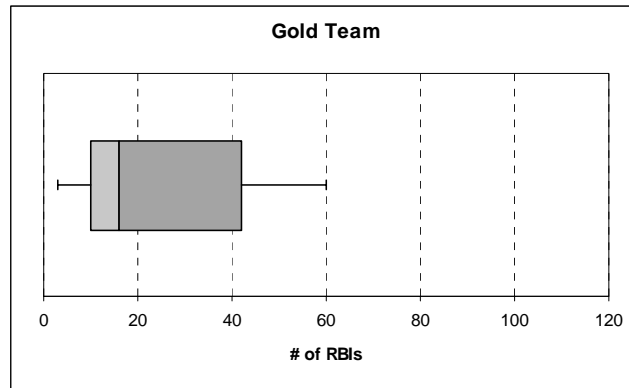
# of RBIs

Your first job as team manager is to add 3 players (to replace 3 that retired) to the team. You must meet these goals.
- Do not increase the current range of RBIs.
- Keep the various numbers of RBIs as clustered around the median as possible.

a. Open the **PureGold** spreadsheet to see the RBI statistics on your current players and the players that are available to join your team.
b. Add 3 players to get the desired results.
c. Prepare a statement for the press that lists the RBIs of the players you added <u>and</u> describes the impact of these additions on each of the following statistical measures for your team.
d. Justify your statement by including the amount of change (if any) from the original statistics and original box and whisker plot, along with how these additions might benefit the team.
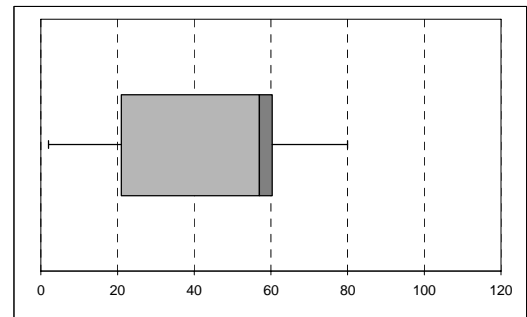- Range
- Median
- Mean

1.
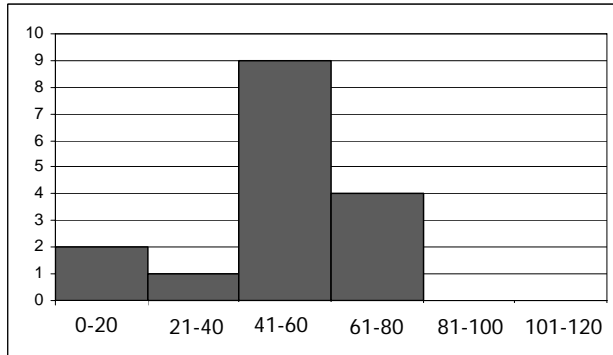
Which of the following box and whisker plots would contain data similar to the histogram above?
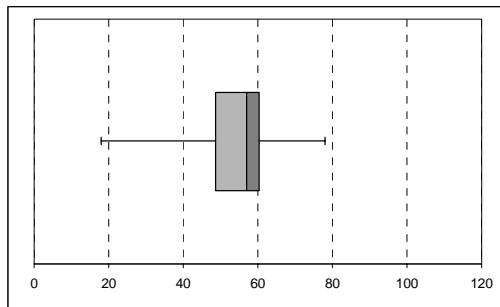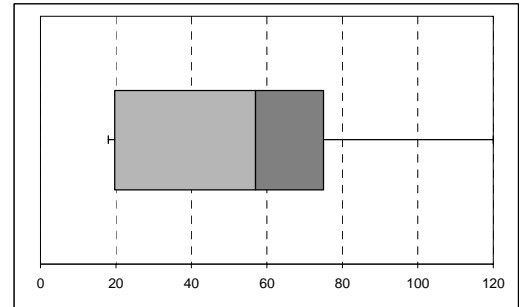
A.
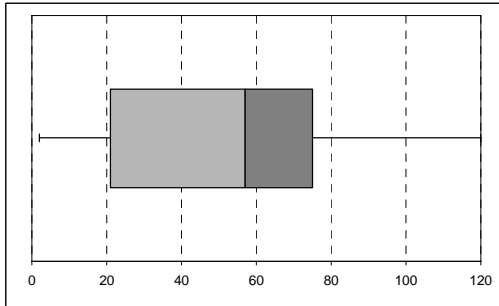
C.

B.

D.

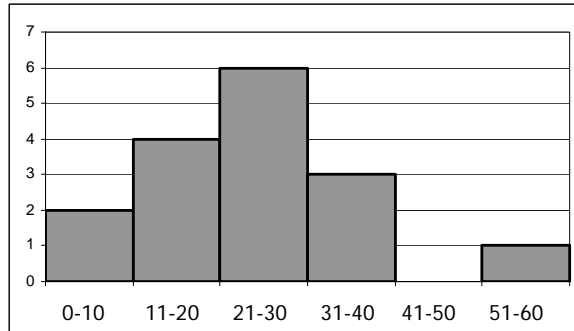**2.** Which statistical measure is NOT evident on a box and whisker plot?

    A.   range
    B.   median
    C.   mode
    D.   all are evident

Use the information below to answer questions 3 and 4.

A police officer sat on the side of the road and monitored the speed of the traffic with a radar gun. The histogram below represents the speeds of the first sixteen cars to go by.

3.   What was the range in speed of the cars?

A.   60 mph
B.   6 mph
C.   50 mph
D.   cannot be determined from the graph

4.   If the road the officer was monitoring was a school zone (speed limit of 20 mph), how many of those cars were speeding?

A.   10
B.   40
C.   6
D.   not enough information