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

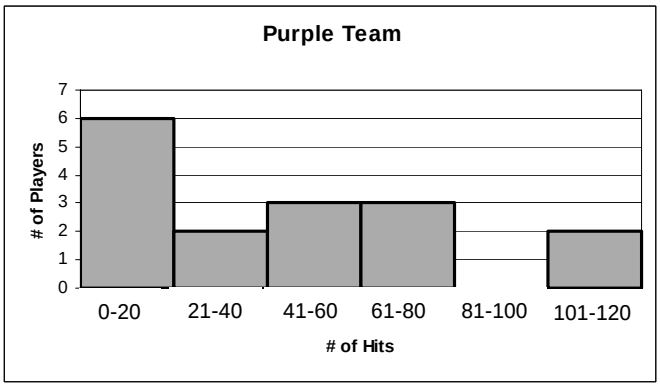
1. The box and whisker plot of the _____ Team has the longest whisker. This is usually an indication that the set of data contains at least one _____ .
2. The _____ of the data is the central tendency for which the graphic representations give us the least information.
3. The graphic representation with 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.

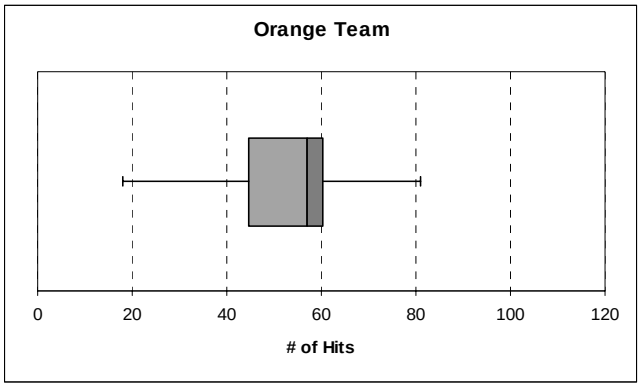
---

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.





Hard Hitting Harold (H^3 for short) has offers to join both the Purple team and the Orange team. H^3 had 100 hits last season.

As a local sports reporter, you have received the task of analyzing the impact for each team, should H^3 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 H^3 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?

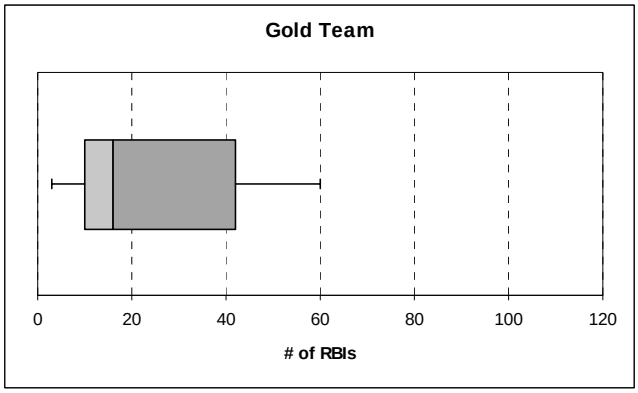
4. Should H^3 join the team, what would be the impact on the range, median, and mean number of hits for the Purple team? for the Orange team?

5. In your opinion, which team would benefit the most from having H^3 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.

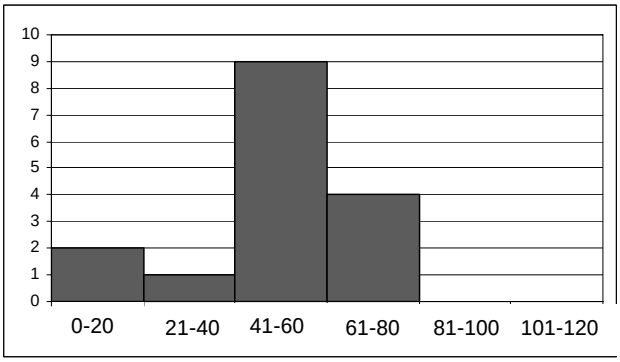


Your first job as team manager is to add 3 players (to replace 3 that retired) to the team. You must meet these goals.

- Do not increase the current range of RBIs.
- Keep the various numbers of RBIs as clustered around the median as possible.

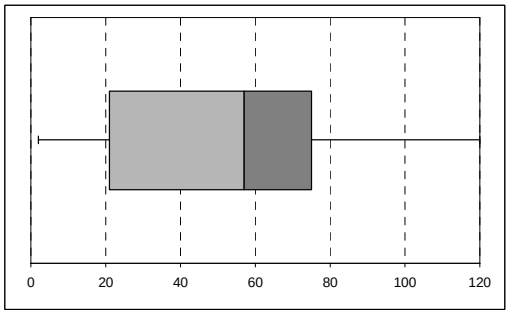
a. Open the **PureGold** spreadsheet to see the RBI statistics on your current players and the players that are available to join your team.
b. Add 3 players to get the desired results.
c. Prepare a statement for the press that lists the RBIs of the players you added and describes the impact of these 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.

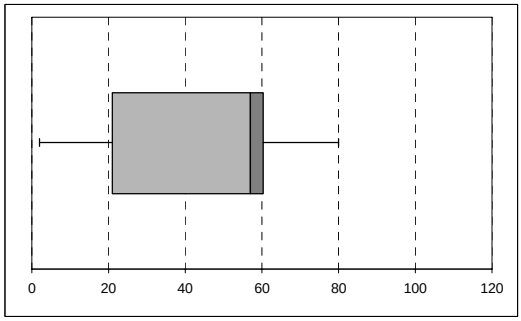


Which of the following box and whisker plots would contain data similar to the histogram above?

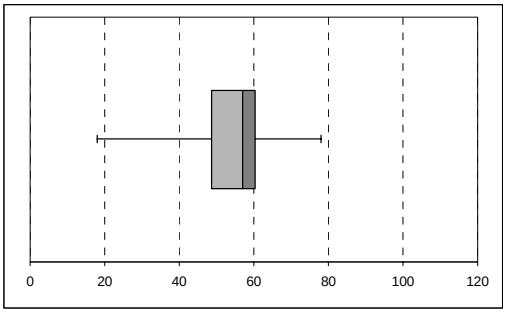
A.



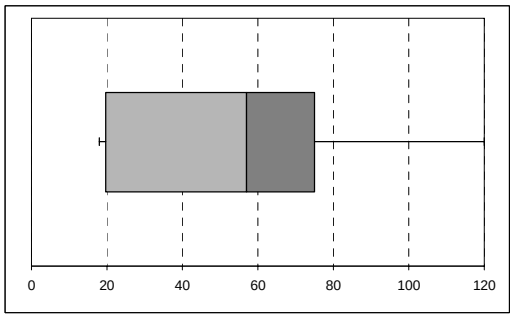
C.



B.



D.

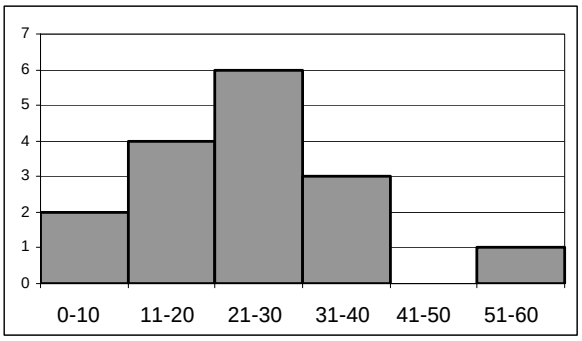


2. Which statistical measure is NOT evident on a box and whisker plot?

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

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 calculator. Each term can be used only once.

median	Red	mode	Blue
Green	range	outlier	mean

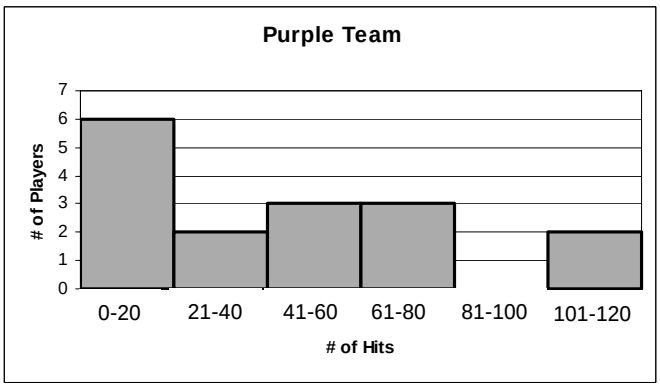
1. The box and whisker plot of the _____ Team has the longest whisker. This is usually an indication that the set of data contains at least one _____ .
2. The _____ of the data is the central tendency for which the graphic representations give us the least information.
3. The graphic representation with the smallest box (on the box and whisker plot) for the _____ Team reflect 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 was 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.

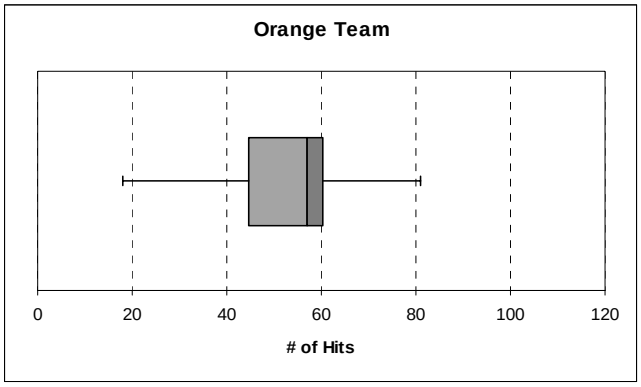
---

7. If you got the choice 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. (Go to the **Graphs** worksheet to make it easier to see all at the same time.)

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.





Hard Hitting Harold (H^3 for short) has offers to join either the Purple team or the Orange team. H^3 had 100 hits last season.

As a local sports reporter, you have been given the task of analyzing the impact for each team, should H^3 join either the Purple or the Orange team. You must base your analysis on what you can gather from the graphical representations you have been given.

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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 H^3 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?

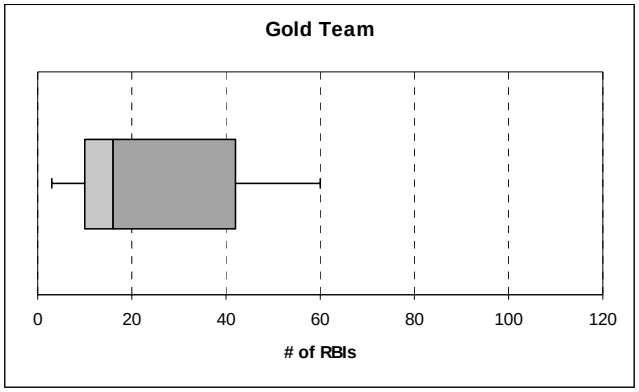
4. Should H^3 join the team, what would be the impact on the range, median, and mean number of hits for the Purple team? for the Orange team?

5. In your opinion, which team would benefit the most from having H^3 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 to take over as manager of the Gold Team. Currently, a plot of the number of RBIs (runs batted in) by the members of your team is shown below.

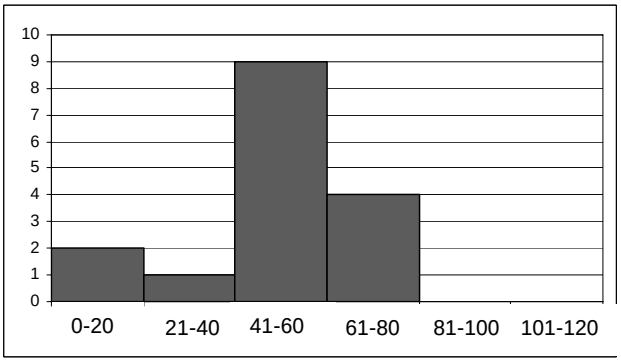


Your first task will be to add 3 players (to replace 3 that retired) to the team to meet these goals.

- Do not increase the current range of RBIs.
- Keep the various numbers of RBIs as clustered around the median as possible.

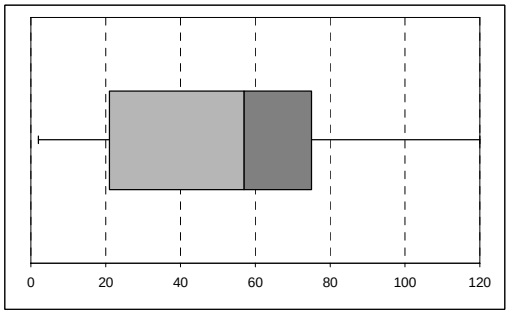
a. Input the RBIs for the players currently on the team in L1.
   3, 15, 8, 20, 45, 16, 39, 10, 10, 42, 60, 55, 5
b. Add 3 players to get the desired results. The RBIs for the players available to join your team are 65, 18, 22, 6, and 30.
c. Prepare a statement for the press that lists the RBIs of the players you added and describes the impact of these additions on each of the following statistical measures for your team. 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.

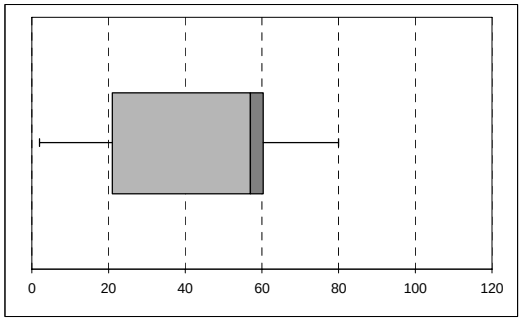


Which of the following box and whisker plots would contain data similar to the histogram above?

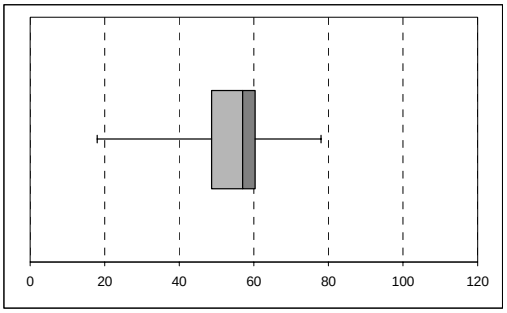
A.



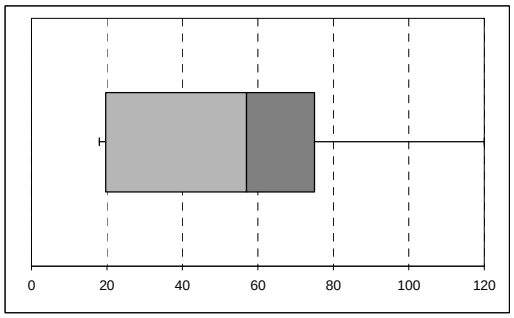
C.



B.



D.

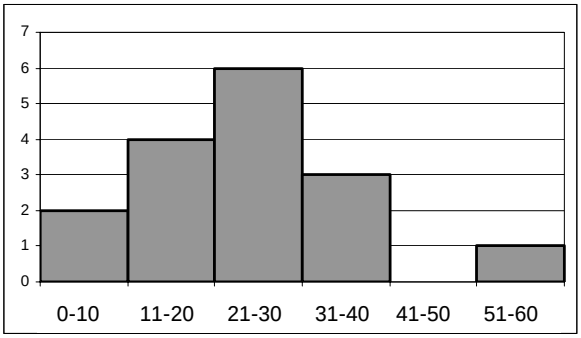


2. Which statistical measure is **not** evident on a box and whisker plot?

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

Use the following graph 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. not enough information

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

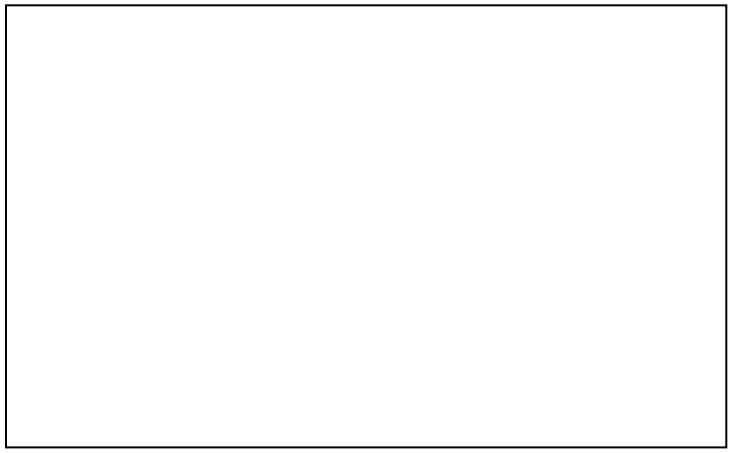
Student Name(s)_____ Date_____

Round and Round

Open the **RoundandRound** spreadsheet.

A. Input your class data from Transparency 2. (Use the table that starts in row 6.)

Sketch the scatterplot that resulted from entering class data.



B. For each statement, choose the scatterplot(s) that best represents the situation.

_____1. After the 1st attempt, most students were able to increase the number of revolutions on their 2nd attempt.

_____2. After the 1st attempt, most students made fewer revolutions on their 2nd attempt.

_____3. The number of revolutions on the 1st attempt is about the same as the number of revolutions on the 2nd attempt.

_____4. There is not a strong relationship between the number of revolutions made in the two attempts.

_____5. Most students did considerably better on their 2nd attempt than on their 1st attempt.

_____6. Based on the data you have from your class, which scatterplot would look most like yours? Explain.

7. Now that you have analyzed possible scenarios for scatterplots A, B, and C, write a statement that describes the relationship between the 1st attempt and 2nd attempt for your class.

8. Use formulas to calculate the mean, median, and mode of the data for the 1st attempt and for the 2nd attempt. (Use the table in rows 50-53.) Record the results below.

	1st attempt	2nd attempt
mean		
median		
mode		

9. Which measure of central tendency best describes the number of revolutions made on the 1st attempt and 2nd attempt? Explain your choice.

Student Name(s)_____ Date_____

What's In A Name?

Access the website **http://www.ssa.gov/OACT/babynames/**. In an earlier activity we compared the ranking of the top ten names of your parents' generation (1965) to the ranking of those names today to answer the question about how the popularity of names stands the test of time.

a. Consider the following set of questions.
   How has the number of people having the most popular boy name changed over the last 10 years? How many people do you predict might have the most popular name in 2010?

b. Open the **WhatName** spreadsheet and input the data to create a scatterplot.

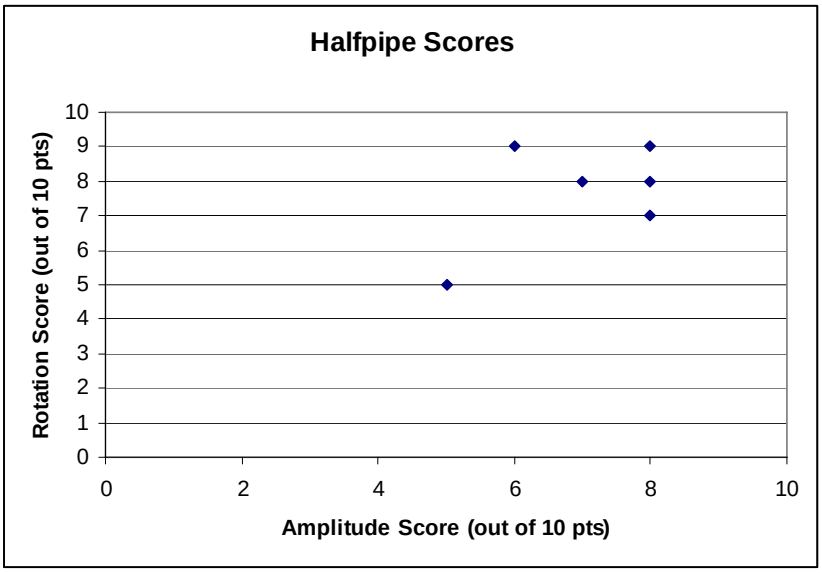
c. Draw a trendline if appropriate.

d. Calculate the mean, median, and range of your data.

e. Respond to the questions in part a. Justify your answers using the scatterplot, trendline, and/or statistical measurements to support your conclusions.

Student Name(s)_____ Date_____

1. The scatterplot below compares the score for amplitude (height) to the score for rotations (spins and flips) for six skateboarders at the weekend meet.



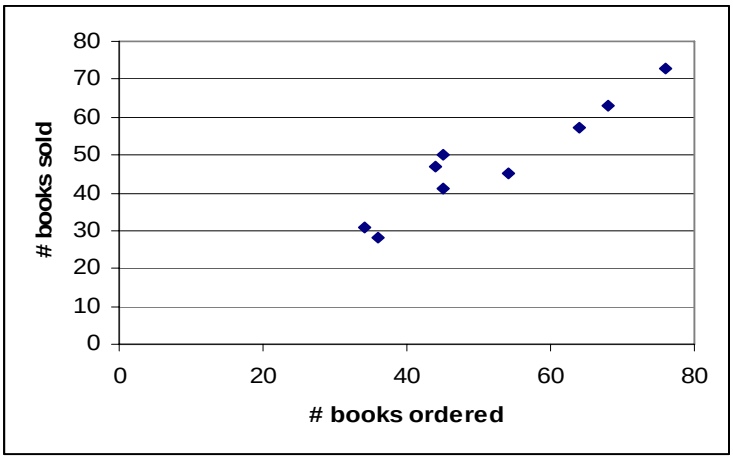
Which of the following statements would be supported by the scatterplot?

A. As the score for amplitude increases, the score for rotations tends to increase.
B. As the score for amplitude increases, the score for rotations tends to decrease.
C. As the score for rotations increases, the score for amplitude tends to decrease.
D. The score for rotations tends to be the same as the score for amplitude.

2. Which relationship, when graphed on a scatterplot, would NOT be described as having a positive trend?

A. The number of fans in a football stadium compared to the noise level of the stadium.
B. The amount of money earned babysitting compared to the number of hours spent babysitting.
C. The number of miles driven compared to the amount of gasoline in the tank.
D. All of the above relationships have a positive trend.

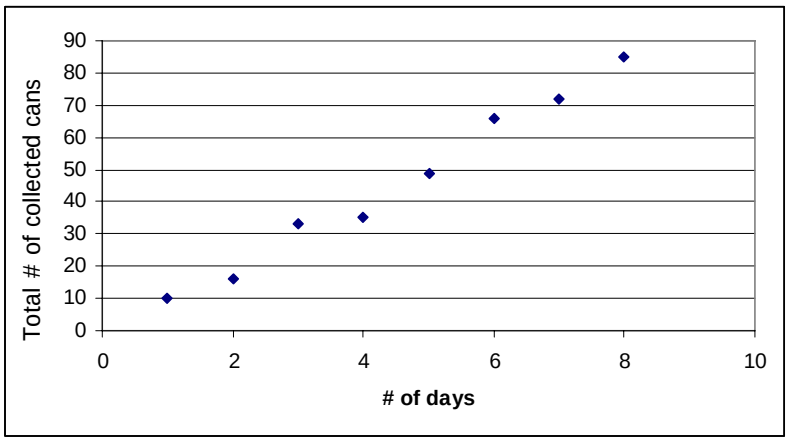
3. The following scatterplot compares the number of books ordered through the school fund raiser to the number of books that were sold.



If the mean number of books ordered is about 52, estimate the mean number of books sold based on the trends in data in the scatterplot.

A. greater than 55
B. between 50 and 55
C. between 45 and 50
D. less than 40

4. Ms. Smith's class is recording data about an aluminum can recycling project as shown in the scatterplot below.



At this rate, about how many days will it take to collect 150 cans?

A. 150 days
B. 20 days
C. 15 days
D. 10 days

Student Name(s)_____ Date_____

Round and Round

A. Input your class data from Transparency 2. (Use the table that starts in row 6.)

Sketch the resulting scatterplot.

B. For each statement, choose the scatterplot(s) that best represents the situation.

_____1. After the 1st attempt, most students were able to increase the number of revolutions on their 2nd attempt.

_____2. After the 1st attempt, most students made fewer revolutions on their 2nd attempt.

_____3. The number of revolutions on the 1st attempt is about the same as the number of revolutions on the 2nd attempt.

_____4. There is not a strong relationship between the number of revolutions made in the two attempts.

_____5. Most students did considerably better on their 2nd attempt than on their 1st attempt.

_____6. Based on the data you have from your class, which scatterplot would look most like yours? Explain.

Student Name(s)_____ Date_____

Round and Round (continued)

7. Now that you have analyzed possible scenarios for scatterplots A, B, and C, write a statement that describes the relationship between the 1st attempt and 2nd attempt for your class.

8. Use formulas to calculate the mean, median, and mode of the data for the 1st attempt and for the 2nd attempt. Record the results below.

	1st attempt	2nd attempt
mean		
median		
mode		

9. Which measure of central tendency best describes the number of revolutions made on the 1st attempt and 2nd attempt? Explain your choice.

Baby Names

(based on data from Social Security card applications)

Given: Some baby names are more popular (occur more often) than others. The list of the most popular baby names changes from year to year. While some names are used less over time, others remain popular.

Question: Over the last 40 years, do you think boy names or girl names have been less "trendy"? In other words, do you think children in your generation are more likely to have the same names as adults in your parents' generation if they are boys or girls? Today you will research to compare the ranking of the most popular names in the year 1965 to the ranking of those names in the year 2004 (a span of 40 years).

Directions:
1. Go to the website below to determine the top 10 names for boys and girls in the year 1965.
2. Record the names missing in the tables below.
3. Look up ranks missing for each name for the year 2004 and add that data to the chart. (The database lists the top 1000 names. Use a rank of 1001 if a name is not included.)

http://www.ssa.gov/OACT/babynames/

BOYS		
Name	**1965 Rank**	**2004 Rank**
	1	
John	2	18
David	3	
James	4	17
	5	
William	6	
	7	113
Richard	8	
Thomas	9	37
Jeffrey	10	

GIRLS		
Name	**1965 Rank**	**2004 Rank**
	1	
Mary	2	
	3	154
Kimberly	4	
Susan	5	565
Patricia	6	
Donna	7	781
	8	
Cynthia	9	
Angela	10	105

Baby Names

4. Looking at the data in the table, what do you notice about the change in rank of the top 10 names for boys versus the change in rank of the top 10 names for girls over the last 40 years?

5. Looking at the data in the scatterplot, explain how any observations you made from the table in #4 are reflected in the scatterplot.

6. Calculate the mean rank of the given boy names for 2004 and girl names for 2004. How many boy names and how many girl names were more popular than the mean rank?

7. Calculate the median rank of the given boy names for 2004 and girl names for 2004. How many boy names and how many girl names were more popular than the median rank?

8. Calculate the range in the rankings of the given boy names for 2004 and girl names for 2004. How does the range value for the boys compare to that of the girls? What does this mean?

9. Determine whether the mean or median best describes the data. Position the lines below the scatterplot (solid for boys and dashed for girls) on the scatterplot to represent these measurements. What does the position of the lines on the scatterplot emphasize about the relationship between how the popularity of the top ten names for boys and girls has changed from your parents' generation to now?

10. Describe the relationship between the points on the scatterplot and the lines you drew in #9 for the boy names and the girl names. What does this mean?

What's In A Name?

1. Access the website **http://www.ssa.gov/OACT/babynames/** . In an earlier activity we compared the ranking of the top ten names of your parents' generation (1965) to the ranking of those names today to answer the question about how the popularity of names stands the test of time.
   a. Consider the following set of questions.
      How has the number of people having the most popular boy name changed over the last 10 years? How many people do you predict might have the most popular name in 2010?
   b. Fill in the table using the website.

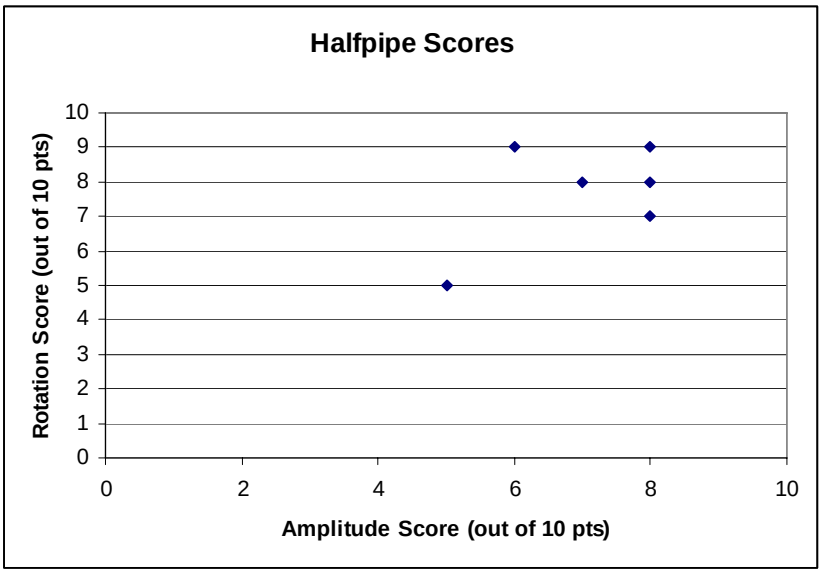
?	?

   c. Use the TI-73 to create a scatterplot.
   d. Draw a trendline if appropriate.
   e. Calculate the mean, median, and range of your data.

Minimum	
Maximum	
Mean (average)	
Median	
Mode	
Range	

   f. Respond to the questions in part a. Justify your answers using the scatterplot, trendline, and/or statistical measurements to support your conclusions.

1. The scatterplot below compares the score for amplitude (height) to the score for rotations (spins and flips) for six skateboarders at the weekend meet.



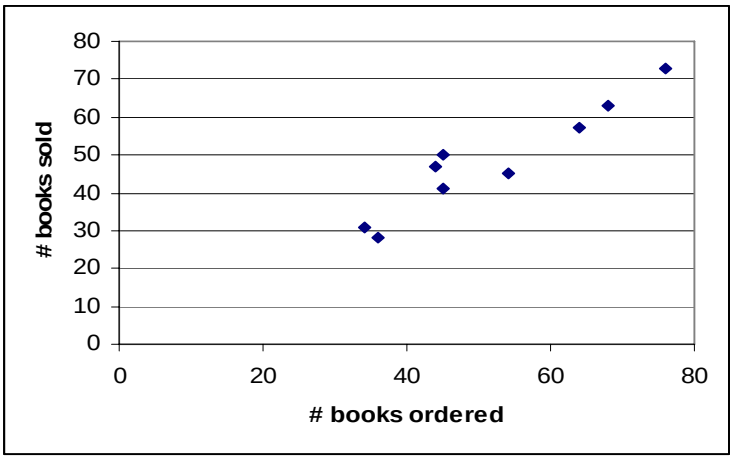
Which of the following statements would be supported by the scatterplot?

A. As the score for amplitude increases, the score for rotations tends to increase.
B. As the score for amplitude increases, the score for rotations tends to decrease.
C. As the score for rotations increases, the score for amplitude tends to decrease.
D. The score for rotations tends to be the same as the score for amplitude.

2. Which relationship, when graphed on a scatterplot, would **not** be described as having a positive trend?

A. Height of a student compared to his/her weight
B. The amount of money earned babysitting compared to the number of hours spent babysitting
C. The number of miles driven compared to the amount of gas in the tank of the car
D. All of the above relationships have a positive trend.

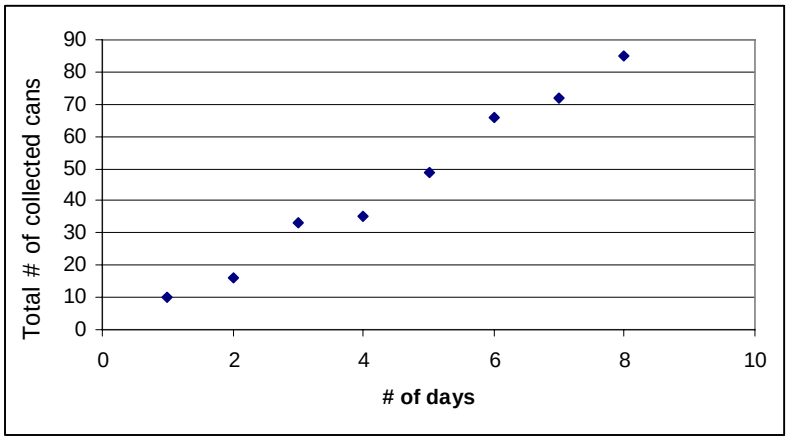
3. The following scatterplot compares the number of books ordered through the school fund raiser to the number of books that were actually paid for and sold.



If the mean(average) number of books ordered is about 52, estimate the mean(average) number of books sold based on the trends in data in the scatterplot.

A. greater than 49
B. between 47 and 49
C. between 45 and 47
D. less than 45

4. Ms. Smith's class is collecting aluminum cans for a recycling project as shown in the scatterplot below.



At this rate, about how many days will it take to collect 150 cans?

A. 15 days
B. 10 days
C. 20 days
D. 150 days