

Box Plots and Quartiles

Name: _____

Date: _____

Class: _____

Use each data set below to find the following:

Minimum, Maximum, Range, Median, Lower Quartile, Upper Quartile, and Inner Quartile Range.

1) 4, 5, 7, 8, 9, 12, 13, 15, 17, 20, 21

Min ____ Max ____ Range ____ Median ____ LQ ____ UQ ____ IQR ____

2) 12, 13, 14, 15, 15, 16, 16, 18, 18, 19, 20, 21, 24, 30, 37

Min ____ Max ____ Range ____ Median ____ LQ ____ UQ ____ IQR ____

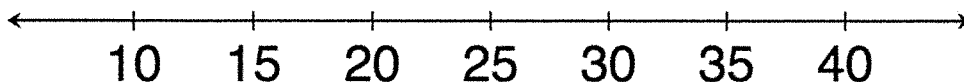
3) 22, 27, 39, 41, 42, 43, 44, 45, 46, 48, 50, 51, 52, 55, 60

Min ____ Max ____ Range ____ Median ____ LQ ____ UQ ____ IQR ____

4) 1, 2, 2, 2, 4, 5, 5, 6, 6, 6, 6, 6, 6, 7, 9, 10, 13, 13, 14

Min ____ Max ____ Range ____ Median ____ LQ ____ UQ ____ IQR ____

Use the number line and space below to create a box plot for data set # 2 above. Label all the critical points on the box plot. Be neat and precise.

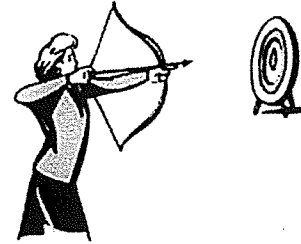


Archery

This problem gives you the chance to:

- draw a box plot
- compare sets of data

Guy and Sagar both enjoy archery and hope to be picked for their college team.



There have been 15 matches in college this year. These are the scores for Guy.

1192	1258	1038	1208	956	1052	1262	994	1128	1066	1286	1174	1050	926	1240
------	------	------	------	-----	------	------	-----	------	------	------	------	------	-----	------

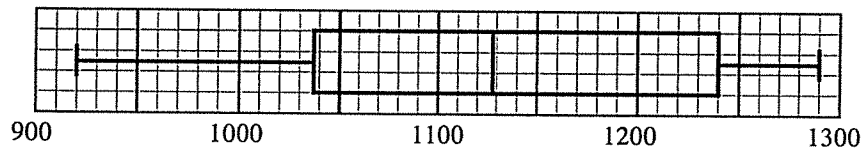
Guy's mean score is 1122.

These are the scores for Sagar.

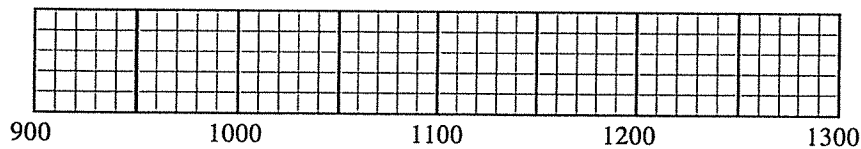
1134	1098	1182	1126	1066	1204	1052	1072	1156	1102	1088	1220	1168	1106	1164
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

Sagar's mean score is 1129.

Here is a box plot for Guy's scores.



1. Draw a box plot for Sagar's scores.



2. Explain the main points on your box plot.

3. Who is the more consistent archer?
Explain how you know.

4. If you were picking the college team would you choose Guy or Sagar?
Explain why you would make this choice.

Suzi's Company

This problem gives you the chance to:

- calculate and interpret mean, medium and mode in a given table of realistic data

Suzi is the chief executive of a small company, TechScale, which makes technical instruments. Fifteen people, including Suzi, work in the company. The table shows the jobs and their annual salaries.

<i>Job Title</i>	<i>Number of people</i>	<i>Annual salary</i>	<i>Total</i>
Chief Executive	1	\$100 000	\$100 000
Marketing Manager	1	\$80 000	
Production Manager	1	\$80 000	
Technician	3	\$50 000	\$150 000
Office worker	2	\$40 000	\$80 000
Assembly worker	5	\$30 000	
Cleaner	2	\$20 000	
<i>Total</i>	15	<i>Total</i>	

- a. Complete the final column of the table to find the total annual salary bill for TechScale.
b. Use your answer to question 1a to calculate the mean annual salary for the 15 employees in the company. Give your answer correct to the nearest \$.

Show your calculations.

\$ _____

2. John looks at the table and says, "The mode of the salary at TechScale is eighty thousand dollars a year."

a. What mistake has John made?

b. What is the correct mode of the salary?

3. a. What is the median annual salary at TechScale?

b. Explain how you figured it out.

4. Which of the three averages, mean, median or mode, would you use to show that the average wage at TechScale is very good?

Explain your answer.

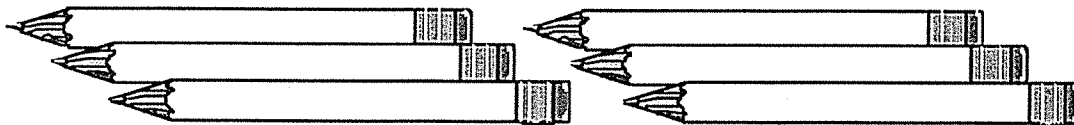
5. Last year, TechScale did not do very well so Suzi decided not to pay herself any salary for a year.

Which of the averages (mean, median and mode) will **not** change?

PENCILS

This problem gives you the chance to:

- analyze data and draw sensible conclusions from it
- explain how you arrived at these conclusions



Roberto puts **seven pencil boxes** on a table.

No box has more than 9 pencils inside, and some boxes may be empty.

The **mean** number of pencils in the boxes is 4, the **median** is 4, and the **mode** is 6.

1. Find the total number of pencils in the boxes. Explain your reasoning.

2. Gloria says that the numbers of pencils in the boxes is 0, 1, 2, 2, 4, 5, 9. Gloria is **not** correct. Explain how you know that she is not correct.

3. Try to figure out how many pencils are in each of the seven boxes.
