

Unit 4 Review 1 – Statistics

Use the following data for questions #1 – 5. Remember to show all relevant work and make work clear and easy to follow.

These are recent test scores as percentages for one class of students. *25 students*

92, 53, 68, 83, 67, 21, 75, 79, 0, 88, 95, 52, 75, 81, 79, 60, 90, 28, 0, 85, 62, 59, 93, 76, 37
 0, 0, 21, 28, 37, 52 | 53, 59, 60, 62, 67, 68, 75, 75, 76, 79, 79, 81, 83 | 85
 88, 90, 92, 93, 95

1. Find the following data values:

Mean:

$$1598 \div 25 =$$

63.92

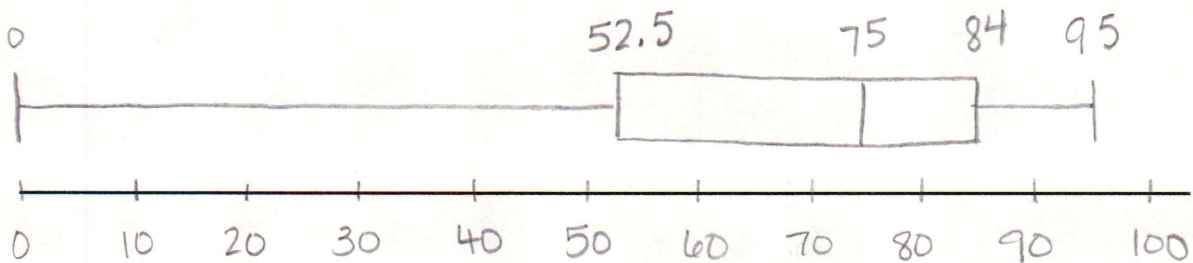
Median: 75

Mode:

0, 75, 79

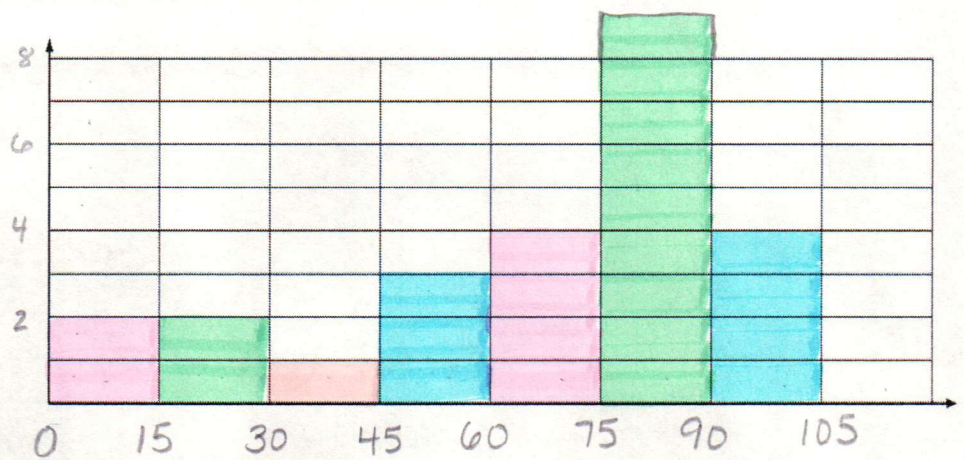
Range: $95 - 0 = 95$

2. Make a box and whisker plot of the data.



3. Make a histogram of the data.

Intervals	Frequency
0-14	11
15-29	11
30-44	1
45-59	111
60-74	1111
75-89	111111
90-104	11111



Test Score

4. Describe the distribution of the data displayed in the histogram.

Mode: unimodal

Outliers: none

Skew: Skewed left

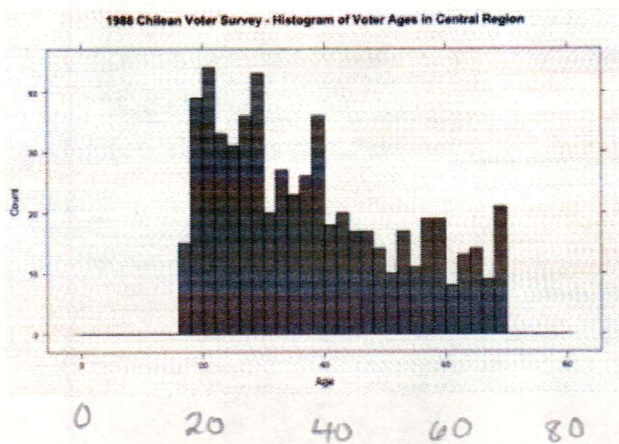
Variability: high, score cover the entire range of possible scores

5. What conclusions can you draw about how the class did on the test?

most students did fairly well, the tallest 3 bars are from 60-104.

Describe the data distribution for each of the following statistical models.

6.



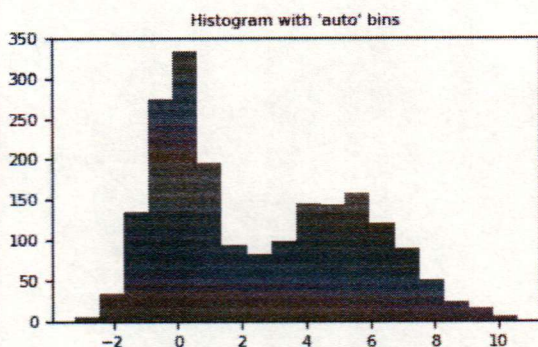
Mode: multimodal

Skew: Skewed right

Outliers: none

Variability: normal or high because you can't vote until you are an adult so 18-70 is most of the possible range

7.



Mode:

Bimodal

Skew:

Skewed right

Outliers:

none

Variability: no context, so normal or high

Use the following Two-Way frequency table to answer questions #8 – 12.

You are in charge of finding a theme for homecoming. You gave a poll with these themes and this is the resulting data.

	Candyland	Starry Night	Moana	Totals
9 th grade	23	18	12	53
10 th grade	30	9	16	55
11 th grade	12	20	22	54
12 th grade	8	35	21	64
Totals	73	82	71	226

8. Calculate the relative frequencies for the table.

	Candyland	Starry Night	Moana	Totals
9 th grade	10.2%	8.0%	5.3%	23.5%
10 th grade	13.3%	4.0%	7.1%	24.3%
11 th grade	5.3%	8.8%	9.7%	23.9%
12 th grade	3.5%	15.5%	9.3%	28.3%
Totals	32.3%	36.3%	31.4%	100%

9. Calculate the conditional frequencies of rows.

rows →

	Candyland	Starry Night	Moana	Totals
9 th grade	43.4%	34.0%	22.6%	100%
10 th grade	54.5%	16.4%	29.1%	100%
11 th grade	22.2%	37.0%	40.7%	100%
12 th grade	12.5%	54.7%	32.8%	100%
Totals	32.3%	36.3%	31.4%	100%

10. Calculate the conditional frequencies of columns.

↓ columns

	Candyland	Starry Night	Moana	Totals
9 th grade	31.5%	22.0%	16.9%	23.5%
10 th grade	41.1%	11.0%	22.5%	24.3%
11 th grade	16.4%	24.4%	31.0%	23.9%
12 th grade	11.0%	42.7%	29.6%	28.3%
Totals	100%	100%	100%	100%

	Candyland	Starry Night	Moana	Totals
9 th grade	23	18	12	53
10 th grade	30	9	16	55
11 th grade	12	20	22	54
12 th grade	8	35	21	64
Totals	73	82	71	226

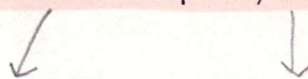
11. Highlight the **marginal frequencies** on the above table.
12. What are two immediate observations you can make from the original two way frequency table?

- Be specific and use data

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13. Using the different relative or conditional frequencies you calculated, what homecoming theme did you choose? **Back up your choice with frequency data you calculated.**

Choice, because



14. Why are the different ways to calculate the data helpful? What is the biggest difference that you noticed?

The relative frequency gives you the overall picture, the conditional frequency lets you look at one variable at a time

15. Give two conditional statements from the conditional frequency tables. Label which is from the row and which comes from the column tables.

Column: Column header → row header

Of the people who chose Candyland, 31.5% were freshmen.

Row: Row header → column header

43.4% of freshmen chose the Candyland theme.