

Name KEY Class Period _____

*Know the following statistics vocabulary terms and be able to use them accurately:
 Mean, Median, Mode, Range, Dot Plot, Histogram, First Quartile (Q1), Third Quartile (Q3), Interquartile Range (IQR), Outlier, Box Plot, Mean Absolute Deviation (MAD), Measures of Center, and Measures of Spread

① ③ ②
④

*Know how to describe the shape of a distribution using the following terms:
 Symmetric, Skewed Left, Skewed Right, Uniform, and Non-Symmetric, Bimodal, Unimodal

*Know what Two – Way Frequency Charts are and the vocabulary that pertains to them:
 Categorical Data, Quantitative Data, Bivariate Data, Relative Frequency, Joint Frequency, Marginal Frequency, and Conditional Frequency

Use the following data for # 1 – 11: 21, 17, 3, 26, 21, 32

3 | 17 | 21 | 21 | 26 | 32
21

1. Mean $\frac{120}{6} = 20$

2. Median 21

3. Mode 21

4. Range $32 - 3 = 29$

5. IQR $26 - 17 = 9$

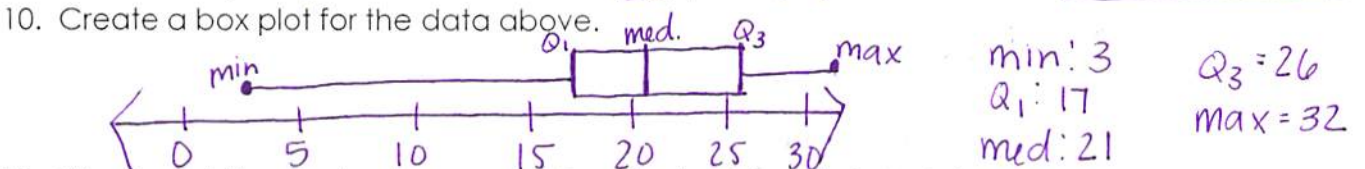
6. Q1 17

7. Q3 26

8. MAD ① $\bar{x} = 20$
 ② $3 - 20 = -17$ $26 - 20 = 6$
 $17 - 20 = -3$ $32 - 20 = 12$
 $21 - 20 = 1$
 $21 - 20 = 1$

③ 17, 3, 1, 1, 6, 12
 ④ $\frac{40}{6} = 6.67 = \text{MAD}$

9. Decide if the data contains any outliers (show your work to support your answer).
 $Q_1 - 1.5(IQR) = 17 - 1.5(9) = 3.5$
 $Q_3 + 1.5(IQR) = 26 + 1.5(9) = 39.5$
 YES 3 is an outlier.



11. What would be the best measure of center for this data? Explain.
 median would be the best measure of center because there is an outlier & it is not affected by outliers.

12. Julie made an 89, 76, 93, and 87 on the first 4 tests of the semester. What grade does she need to make on the 5th test in order to get her test average up to an 88%?

$\frac{89 + 76 + 93 + 87 + X}{5} = 88$ $\$ \cdot \frac{345 + X}{\$} = 88.5$
 $345 + X = 440$
 -345 -345
 $X = 95\%$

13. Use the table to determine the **interval** that would include the median of the data set.

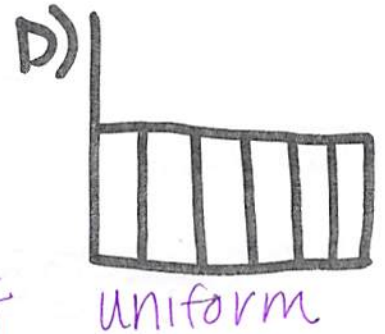
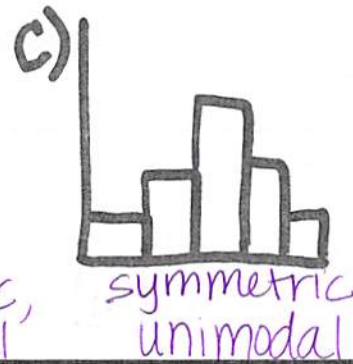
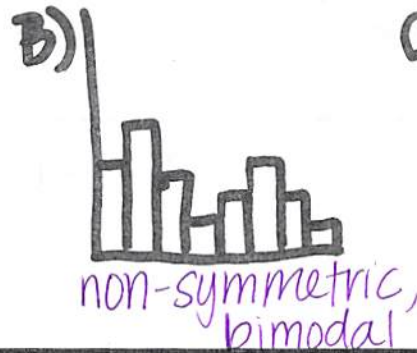
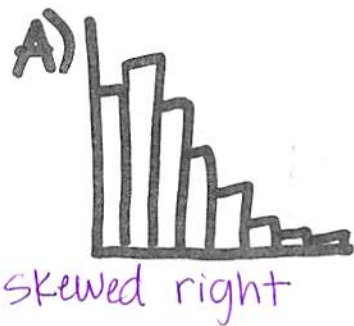
	Interval	Frequency
1	0-5	4
2	6-11	2
3	12-17	1
4	18-23	6
5	24-29	7

① since there are 20 frequencies the median would fall between the 10th & 11th term, which falls in the 18-23 interval.

② Assign each interval a # & find the median. 18-23 interval

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14. Describe the **shape** of the following histograms.



Toby surveys his friends to see which form of exercise they like best. The responses are recorded in the table below.

Exercise	Running	Biking	Hikinig	Totals
Gender				
Males	14	10	5	29
Females	11	13	2	26
Totals	25	23	7	55

15. What is the **joint frequency** of females who prefer to run?

$$11/55 = .2 = 20\%$$

16. What is the **joint frequency** of males who prefer to hike?

$$5/55 = .09 = 9\%$$

17. What is the **marginal frequency** of each exercise?

Running: $25/55 = .45 = 45\%$ Biking: $23/55 = .42 = 42\%$

Hiking: $7/55 = .13 = 13\%$

18. Given that a friend is female, what is the **conditional frequency** she prefers hiking?

$$2/26 = .08 = 8\%$$

19. Given that a friend is male, what is the **conditional frequency** he prefers biking?

$$10/29 = .38 = 38\%$$