MDM4U Review, Unit 4 One-Variable Statistics

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1. Identify three measures of central tendency.	Mean, median, mode
2. Identify two measures of spread.	σ, IQR
3. Identify two types of graphs studied this unit.	Histogram, box and whisker
4. The standard deviation for: X ~ N(34, 25)	5
5. The mean for: X ~ N(34, 25)	34
6. The standard deviation for: X ~ N(600, 9^2)	9
7. The distribution shape where mode > median > mean.	Left skew
8. The distribution shape where mode < median < mean.	Right shew
9. A distribution shape where mode = median = mean.	Mound
10. A distribution shape with two modes.	Bi-modal, U-shaped
11. The measure of spread that goes with a median.	IQR
12. The measure of spread that goes with a mean.	σ
13. The number of σ something is from the mean.	Z-score
14. A measure of how tightly grouped data is around the mean.	σ
15. A measure of central tendency not affected by outliers.	Median
16. A measure of central tendency greatly affected by outliers.	Mean
17. The measure of central tendency used for IQ scores.	Mean
18. The measure of central tendency that is the tallest histogram bar.	Mode
19. The term for the most frequently occurring value.	Mode
20. You add up all the values and divide by the number of values.	Mean

21. The top percentile on the SAT test (or any test, for that matter)	99th percentile
22. Quartiles divide the data into 4; _____ divides the data into 100.	Percentiles
23. What does IQR stand for?	Inter-quartile range
24. What does Q1 stand for?	Quartile 1, the end of the first quarter of data
25. How do you calculate IQR?	Q3-Q1
26. You have a z-score of -1, how many standard deviations is X away from the mean?	1σ below the mean
27. How do you calculate the percentage of data greater than a z-score?	1 – (Percentage below)
28. How do you calculate the percentage of data between two z-scores?	Big Percentage – Small Percentage
29. What is the Excel formula for mean?	=average(A1:A5)
30. What is the Excel formula for σ?	=stdev.p(A1:A5)
31. What is the Excel formula for mode?	=mode(A1:A5)
32. What is the Excel formula for smallest value?	=min(A1:A5)
33. What is the Excel formula for largest value?	=max(A1:A5)
34. What is the Excel formula for Q1?	=quartile.exc(A1:A5, 1)
35. What is the Excel formula for Q3?	=quartile.exc(A1:A5, 3)
36. What is the Excel formula for P(Z<Value)?	=norm.dist(**x,mean, σ**, true) (Note: fill in the cell references for the first three)
37. What is the Normal Distribution?	A commonly occurring distribution. Symmetric It appears in manufacturing and nature. It is continuous, and comes from measured values.

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38. Why is the Normal Distribution useful?	It has standard percentages of data falling at a still number of standard deviations from the mean. We can use the percentages to make predictions about a data set. For example, we can calculate sizes from 95% of the populations. It will be two standard deviations away from the mean.
39. What is the standard deviation?	A measure of spread. It is used with mean. It is used in the normal distribution. It is low if the data is tightly grouped around the mean.
40. Why is the Standard deviation useful?	It allows us to compare data sets. We can tell if there are outliers or not. It allows us to find z-scores and make predictions with the normal distribution.
41. What is the zscore?	The number of standard deviations a value is away from the mean.
42. Why is the zscore useful?	It allows us to compare data from different groups. For example, a students in different classes can be compared using the z-scores. It also allows us to use the zscore table to make predictions about things that fall in the normal distribution.

I. Normal Distribution
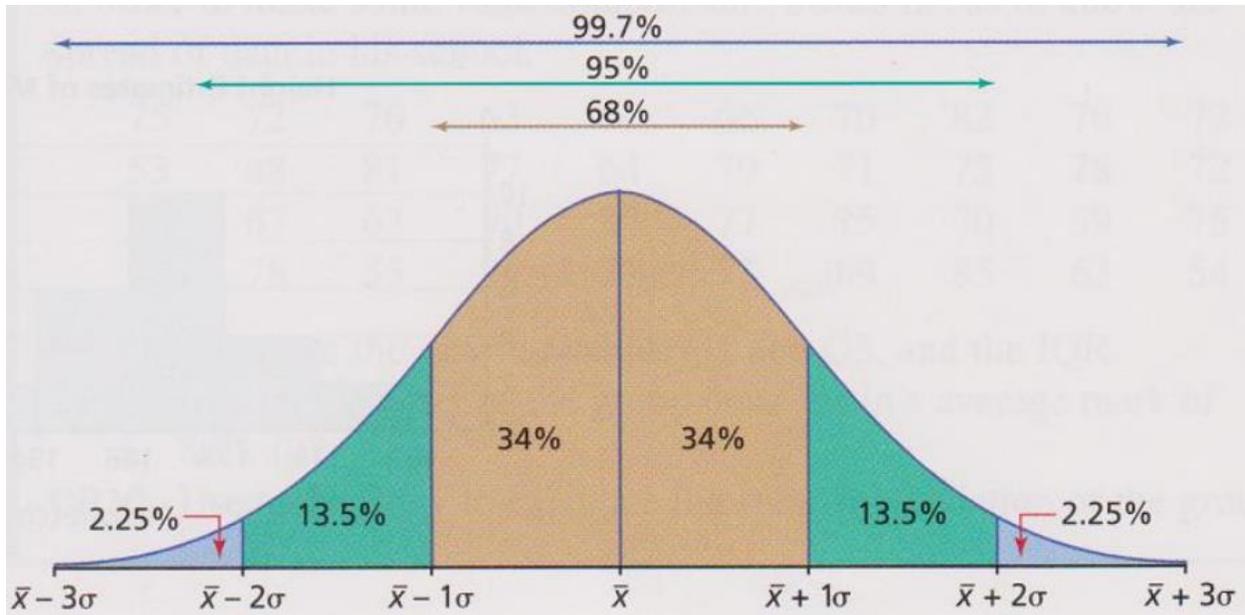
II. Box and Whisker
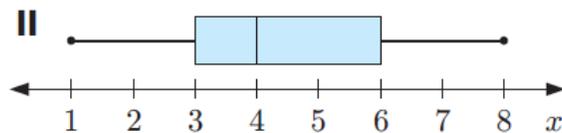
1. What is the min?	1
2. What is the Q1?	3
3. What is the median?	4
4. What is the Q3?	6
5. What is the max?	8
6. What is the IQR?	3

III. Distribution Types
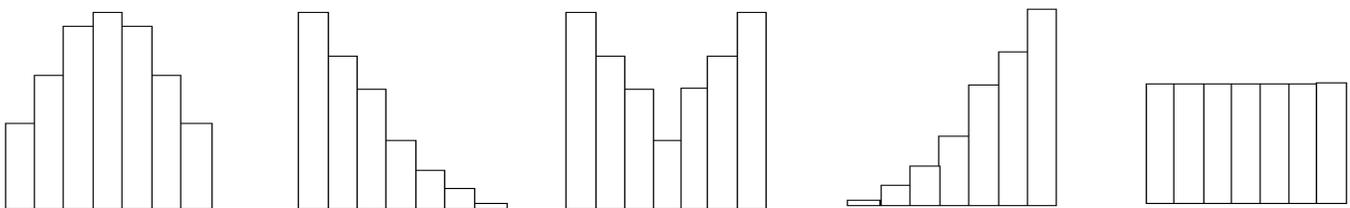
Mound, Right Skew, U-Shaped/Bimodal, Left Skew, Uniform