

Algebra 1 Unit 1 Test Review

1.1 INTRODUCTION

1. Numerical Statistical Question

Ex:

2. Categorical Statistical Question

Ex:

3. Non-Statistical Question

Ex:

} need data to answer
(typical) (average)

- "fact", no variability

1.2 & 1.3 DATA REPRESENTATION

[2, 3, 3, 5, 7, 8, 10, 11]

1. Box Plot

5 Number Summary:

Min - 2

Q₁ - 3

med - 6

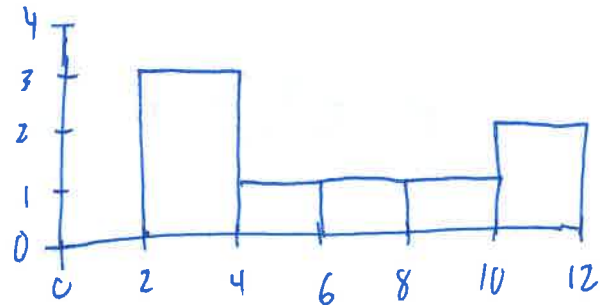
Q₃ - 9

max - 11

2. Histogram

Frequency Table:

0-2	0
2-4	3
4-6	1
6-8	1
8-10	1
10-12	2



3. Dot Plot

1.4: SHAPES

1. Shape of Distribution (Draw histograms)

Skewed right



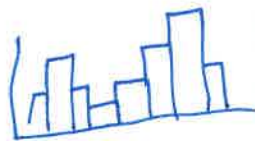
Skewed left



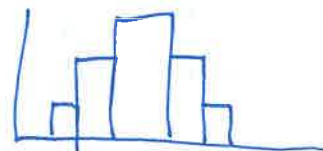
Uniform



Bimodal



Bell-shaped



What is another name for the last three shapes?

Be able to name the shapes given a graph and be able to draw a graph given a name!

symmetric

1.10: THE EFFECTS OF EXTREMES

1. Bell, Uniform Distributions (aka Symmetric)

Center of graph and why? *equal pull of mean both ways*

Mean = Median

Symmetric → use mean + sd

2. Roughly Skewed to the right

Center of graph and why?

Mean > Median

mean is pulled right but median stays put

3. Roughly Skewed to the left

Center of graph and why?

Mean < Median

mean pulled left

mean pulled right

1.11 COMPARING AND CONTRASTING DATA DISTRIBUTIONS (Draw box plots)

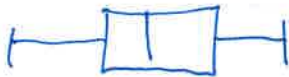
1. Draw a graph that has high variability



2. Draw a graph that has medium variability.



3. Draw a graph that has low variability



4. What does variability mean in a graph?

spread of data values

1.12 & 1.13 STANDARD DEVIATION (Draw dot plots)

1. Draw a graph that has a SMALL standard deviation.

(Explain why) → *dots all close to center (not spread out)*



2. Draw a graph that has a BIG standard deviation

(Explain why)

many dots aren't close lots of spread



3. Draw a graph with a standard deviation of 0. (Explain why)

→ no spread



1.14 OUTLIERS

How to calculate outliers given a set of data?

low cutoff: $Q_1 - 1.5(IQR)$

high cutoff: $Q_3 + 1.5(IQR)$

When do you include an outlier in a set of data? When do you take out an outlier from a set of data?

*Always include unless you are sure it's an error
outliers should be investigated to check for errors*