

Statistics – Data Displays: Categorical and Quantitative

Data Display # 1 – Categorical

- **categorical variable (in a display)** → data that can be displayed using _____ or _____

Ex: 1.) blonde, brunette , red , black , etc. → category = _____

2.) red , yellow , green , purple , etc. → category = _____

3.) collie, shepherd , terrier , labrador , etc. → category = _____

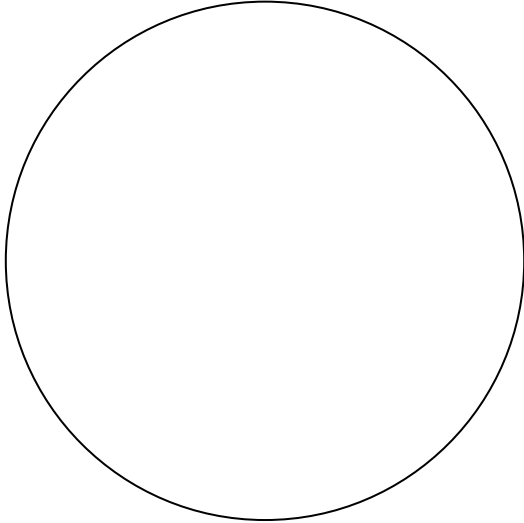
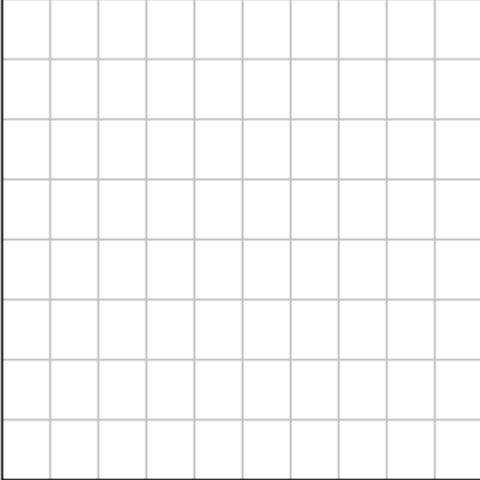
▪ **pie chart** – a type of categorical data display which uses a _____
where each “slice” represents a portion of the whole (percents %)

▪ **bar graph** – a type of categorical data display which uses _____
that’s represented by rectangles of equal width (note: between each “bar” – there are gaps)

Example 1: Express the following data as a pie chart and a bar chart.

Carly did a survey with her friends about their favorite type of movies:

Table: Favorite Type of Movie				
Comedy	Action	Romance	Drama	SciFi
4	5	6	1	4

Data Display # 1 – Categorical: Pie Chart	Data Display # 1 – Categorical: Bar Graph																								
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Data Display # 2 – Quantitative

- **quantitative variable (in a display)** → data that can be displayed using _____

Ex: 1.) 1.2 million , 4.3 million , 2.5 million ,etc. → category = _____

2.) 8 lb , 9 lb , 12 lb , 27 lb , etc. → category = _____

3.) 36 inches , 23 inches , 48 inches , etc. → category = _____

▪ **stem-and-leaf plot** – a type of quantitative data display that is organized from _____ and separated into 2 columns (mainly useful for organizing long list of numbers)

▪ **box-and-whisker plot** – a type of quantitative data display that is organized in _____ and shows the “spread” (min/max, median, range (and outliers)) of a set of data

Example 2: Express the following data as a stem-and-leaf plot and a box-and-whisker plot.

The class scores on a 50-item test are shown in the table below.

71	95	84	98	88	74
90	89	86	42	99	86
91	73	66	87	89	80

Data Display # 2 – Quantitative: Stem-Leaf Plot

Steam	Leaf

Find the following:

a.) mean: _____ b.) median = _____

c.) mode: _____ d.) range = _____

e.) variance: _____

f.) standard deviation: _____

Data Display # 2 – Quantitative: Box-Whisker Plot

minimum (min) → the lowest # that is not an outlier

maximum (max) → the highest # that is not an outlier

lower quartile (LQ / Q1) → median of lower half of data

upper quartile (UQ / Q3) → median of upper half of data

interquartile range (IQR) → range of the middle half of data and contains 50% of data set: $IQR = UQ - LQ$

outlier → an element of a set of data that's at least 1.5 IQR less than the LQ or 1.5 IQR greater than the UQ



Min = _____ LQ = _____

Max = _____ UQ = _____

Median = _____ IQR = _____

Any outliers? _____