Portage Math 110 Elementary Statistics (Module 2)

frequency distribution - ✓✓ANSW✓✓..A tabular summary of data showing the number (frequency) of observations in each of several distinctive (nonoverlapping) categories or classes.

relative frequency - ✓✓ANSW✓✓..A ratio that compares the frequency of each category to the total.

frequency of the class / n where n = total count of all classes

relative percentage - ✓✓ANSW✓✓..percentage of time the value occurs in the sample or population

relative frequency x 100

charting - ✓✓ANSW✓✓..a means to represent frequencies visually

column chart - ✓✓ANSW✓✓..Data graphed as a series of vertical bars

x-axis: class

y-axis: frequency of class

bar chart - ✓✓ANSW✓✓..Data graphed as a series of horizontal bars

x-axis: frequency of class

y-axis: class

pie chart - ✓✓ANSW✓✓..a chart that shows the relationship of a part to a whole

best suited for the distributions focused on the proportions

3 step method to group numerical data into classes - ✓✓ANSW✓✓..1. determine the number of classes to be evaluated

2. determine the width of each class

3. determine the limits of each class

Number of classes - ✓✓ANSW✓✓..(usu b/w 5 and 20)

less than 25 > 5 to 6

25 to 50 > 7 to 14

More than 50 > 15-20

Width of class - ✓✓ANSW✓✓..approx width =

(largest data value - smallest data value) / # of classes

qualitative data - ✓✓ANSW✓✓..frequency distributions

relative frequency distributions

percent frequency distributions

Graphical: bar, column, pie charts

quantitative data - ✓✓ANSW✓✓..frequency distributions

relative frequency distributions

percent frequency distributions

Graphical: histograms

positive relationship - ✓✓ANSW✓✓..an association between two variables in which they increase or decrease together

negative relationship - ✓✓ANSW✓✓..an association between two variables in which one increases while the other decreases

no relationship - ✓✓ANSW✓✓..as one variable increases the other stays the same

measures of central tendency - ✓✓ANSW✓✓..mean, median, mode

"typical" or "average" value of a data set

sample mean - ✓✓ANSW✓✓..x bar

the arithmetic average value of the responses on a variable (sum of values / number of observations)

population mean - ✓✓ANSW✓✓..μ (mu)

calculated mean of the entire population (sum of values in population / N = number of observations in pop)

median - ✓✓ANSW✓✓..midpoint

the middle score in a distribution; half the scores are above it and half are below it

odd = middle number

even = average of two middle numbers

mode - ✓✓ANSW✓✓..The value that occurs most frequently in a given data set.

percentile - ✓✓ANSW✓✓..Specific point in a distribution of data that has a given percentage of cases below it.

quartile - ✓✓ANSW✓✓..A division of the total into four intervals, each one representing one-fourth of the total.

median is Q2

median of lower half is Q1

median of upper half is Q3

interquartile range - ✓✓ANSW✓✓..The difference between the upper and lower quartiles.

Q3-Q1

population variance - ✓✓ANSW✓✓..the difference between each data point in a data set and the population mean of the data set

N, number in the population

sample variance - ✓✓ANSW✓✓..the difference between each data point in a data set and the sample mean of the data set

n, which is the number in the sample

deviation about the mean - ✓✓ANSW✓✓..calculated difference between the data value and the mean

sample standard deviation - ✓✓ANSW✓✓..the positive square root of the variance

population standard deviation - ✓✓ANSW✓✓..the square root of the population variance

coefficient of variation - ✓✓ANSW✓✓..Standard deviation / mean x 100

(expressed as percentage)

how the size of the standard deviation compares to the mean of the data set

z-score - ✓✓ANSW✓✓..the number of standard deviations a particular score is from the mean

empirical rule (bell curve) - ✓✓ANSW✓✓..68.27 - 95.45 - 99.73