

Instructions: You may not use any human help for the completion of this quiz. Use of your homework, tests, notes, book and non-human internet support is acceptable. Good luck! This test is due at 1:00 on Monday, June 23. You have a fifteen minute grace period. After 1:15 the percent possible will go down by 20% every 15 minutes that it is late (at 1:15 you can only get an 80%, at 1:30 you can only get a 60%, at 1:45 you can only get 40%, at 2:00 a 20%, and any time after that you will get 0% credit.)

1. Indicate the type of sampling as systematic, random, convenience, cluster or stratified.
- a) I want to eat lunch and I need to collect information about the students of Gavilan College so I decide to collect information from the students in the cafeteria while I eat lunch
convenience
- b) I ask every 3rd person from my roster their opinion about Triola's book
systematic
- c) A card is drawn from a well-shuffled deck random
- d) The factory produced 25 lots and 5 lots are randomly chosen and information is collected from every item in the lot
cluster
- e) The county is divided into 15 regions and 25 people are randomly chosen from each region stratified
2. Give the level of measurement as ratio, interval, nominal or ordinal.
- a) The height of the students in my class ratio
- b) The year you were born interval
- c) Your GAV ID number nominal
- d) Your grade in my class ordinal
3. Is the following a statistic or a parameter?
- a) In a 10 year sample, the average rainfall in Morgan Hill was 1.2 in. per month. statistic
- b) 5% of the part-time teachers at Gavilan have more than 10 years experience. parameter

+15

+4

+2

1
+11

4. For the following ID as sampling or non-sampling error.

Sampling

In a poll, the percentage of voters favoring our current Representative was 57%, and in a census it was shown that 62% actually favored the Representative.

non-sampling

Paul, who favors abortion, got a 10% more yes responses to a question concerning opinions on abortion than his friend Joe who believes that abortion is wrong under any circumstance.

5. Qualitative data can be broken into 2 types nominal/ordinal and nominal/ordinal, while quantitative data can be broken down into ratio or interval data, which in turn can be classified as either discrete/contin. or continuous/discrete. (Use the words: nominal, ordinal, interval, ratio, quantitative, qualitative, discrete and continuous to fill in the blanks.)

6. For the following sample data **create a stem-and-leaf plot** and then answer the questions that follow.

stem(x/10)	leaf(x)
2	1 2 2 5
3	2 7 8 9 9
4	0 0 3 4 5 9
5	1 3 5
6	1 1 2 5 7

#data pts

a) Find the mean. Show your work. Label appropriately.

You may use the calculator to find the sum of the x's.

$$\bar{x} = \frac{\sum x}{n} = \frac{1011}{23} = 43.93652174 \approx 44$$

b) Find the median. Show the work for the indicator function. Label the median appropriately.

$$L_{\infty} = \frac{1}{2} \cdot 23 = 11.5 \uparrow 12 \quad \tilde{x} = 43$$

c) Find the mode(s) if a mode(s) exists. If there is no a mode, indicate that.

22, 39, 40, 61

d) Based only on the position of the mean, median and mode would you classify this data as left skewed, right skewed or approximately symmetric. Justify your answer.

Right Skewed \bar{x} right of \tilde{x} Symmetric $\bar{x} \approx \tilde{x} \approx \text{modes}$

e) Find the class width if you want 10 classes.

$$\frac{67-21}{10} = \frac{46}{10} = 4.6 \approx 5$$

f) Give the first class. Be sure to give the lower class limit as well as the upper class limit. Show your work in arriving at the upper class limit.

$$21 + 5 = 26 \quad \text{or} \quad 20 + 5 = 25$$

$$21 - 25$$

$$20 - 24$$

2 +20

7. For the following frequency table answer all the questions below:

Classes (Years)	Frequency	Rel. Freq.
7-27	3	$\frac{3}{24} = 0.125$
27-40	5	$\frac{5}{24} = 0.2083$
41-53	9	$\frac{9}{24} = 0.375$
54-66	4	$\frac{4}{24} = 0.1667$
67-79	3	$\frac{3}{24} = 0.125$

$54 - 41 = 13$
 $41 - 13 = 28$

a) What is wrong with the 2nd class' lower limit? Correct it. 28
 It overlaps the 1st class' upper limit.

b) What is the class width? $54 - 41 = 13$

c) What is the lowest, lower class limit?
 $28 - 13 = 15$

d) What is the lowest class boundary? $\frac{28 + 27}{2} = 0.5$ $15 - 0.5 = 14.5$

e) What is the midpoint of the last class? $\frac{79 + 67}{2} = 73$

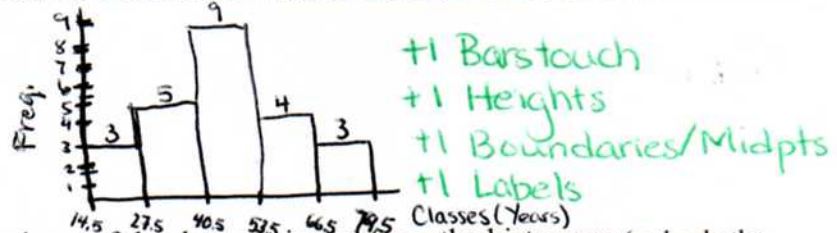
f) How many data points are there? 24

g) Create a relative frequency table for the data above the table above.
 See above

h) Create a cumulative frequency table for the data.

Class	Cummulative Freq
Less than 28	3
< 41	8
< 54	17
< 67	21
< 80	24

i) Create a histogram for the data. Be sure to label the axes and to label the bars appropriately.



j) Based upon the shape of the data as viewed from the histogram (and only the histogram) would you consider this data to be left skewed, right skewed or approximately symmetric. Justify your answer.

Approximately symmetric
 The bulk of the data is in the middle slope down to each side.

3 (+15)