Statistics STA 2023   Name_____

Show all your work to receive full credit

Review for test–1(A)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Create the requested display for the data.

1) A local park district is planning to build a recreation center. The park district conducted a poll to find out the types of physical activities the local population would be interested in. The poll was based on telephone responses from randomly selected adults. The table shows the number of people who expressed interest in various activities.

Activity	Count
Running/Walking	54
Weight Training	48
Biking	34
Aerobics	26
Swimming	13

Create a bar chart /pie chart for these data.

Solve the problem.

2) The test scores of 19 students are listed below. Find the Mean/median/ IQR .
Create histogram/box plot

36	45	49	53	55
56	59	61	62	65
67	72	77	80	81
85	91	94	96	

3) The students in a biology class kept a record of the height (in centimeters) of plants for a class experiment.

49	67	38	55	62
54	36	41	56	43
48	75	44	60	48
52	48	53	59	32

a. Sketch a histogram for these data.
b. Find the mean and standard deviation of the plant heights.
c. Is it appropriate to use the mean and standard deviation to summarize these data? Explain.
d. Describe the association of plant heights.

Solve the problem.

4) For a recent English exam, use the Normal model N(73, 9.2) to find the percent of scores between 56 and 87. Round to the nearest tenth of a percent.

5) Here are summary statistics for the normal monthly precipitation (in inches) for August for 20 different U.S. cities.

Count	Mean	Median	StdDev	Min	Max	Q1	Q3
20	3.23	3.45	1.2	0.4	7.0	2.1	3.8

Would you describe this distribution as symmetric or skewed?

Find the standard deviation for the given data. (Show your steps in arriving at your answer)

6) Here are the commutes (in miles) for a group of six employees.

15.2 22.9 33.3 31.7 17.6 16.0

Provide an appropriate response.

7) Costs for standard veterinary services at a local animal hospital follow a Normal model with a mean of $75 and a standard deviation of $15. What is the IQR for the costs of standard veterinary services? Show your work.

Find the five–number summary for the given data by hand.

8) The frequency table shows the heights (in inches) of 120 adults.

Height	Count	Height	Count
60	1	68	12
61	6	69	6
62	7	70	4
63	5	71	15
64	8	72	10
65	8	73	2
66	12	74	4
67	15	75	5

Has the percentage of young girls drinking milk changed over time? The following table is consistent with the results from "Beverage Choices of Young Females: Changes and Impact on Nutrient Intakes" (Shanthy A. Bowman, *Journal of the American Dietetic Association*, 102(9), pp. 1234–1239):

		Nationwide Food Survey Years			
		1987-1988	1989-1991	1994-1996	**Total**
Drinks Fluid Milk	Yes	354	502	366	1222
	No	226	335	366	927
	Total	**580**	**837**	**732**	**2149**

9) Find the following:

a. What percent of the young girls reported that they drink milk?

b. What percent of the young girls were in the 1989–1991 survey?

c. What percent of the young girls who reported that they drink milk were in the 1989–1991 survey?

d. What percent of the young girls in 1989–1991 reported that they drink milk?

10) What is the marginal distribution of milk consumption?

11) Do you think that milk consumption by young girls is independent of the nationwide survey year? Use statistics to justify your reasoning.

12) During a budget meeting, local school board members decided to review class size information to determine if budgets were correct. Summary statistics are shown in the table.

$\bar{x}$	33.39 students
s	5.66 students
min	17
Q1	29
median	33
Q3	40
max	40

a. Notice that the third quartile and maximum class sizes are the same. Explain how this can be.

b. The school district declares that classes with fewer than 20 students are "too small". Would you consider a class of 20 students to be unusually small? Explain.

c. The school district sets the office supply budgets of their high schools on the enrollment of students. The district budgets each class $12 plus $0.75 per student, so a class with one student receives $12.75 and the classes with 40 students receive 12 + 0.75(40) = $42. What is the median class budget for office supplies? And the IQR?

d. What are the mean and standard deviation of the class office supply budgets?