Population Sample

4) Determine the skewness of the data:

a) The mean score on a history test for a class of 45 students is 78 points, and the median score is 85 points.

skewed to the right skewed to the left symmetric

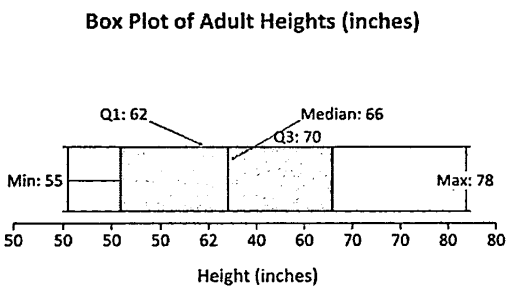
b) The mean monthly salary of 100 employees at a company is $5,500, while the median monthly salary is $4,800.

skewed to the right skewed to the left symmetric

c) The mean height of a large group of adults is 68 inches, and the median height is also 68 inches.

skewed to the right skewed to the left symmetric

5) Based on a study of heights, this is the boxplot as it follows:



Using this information, what is the interquartile range (IQR)? Also, what height represents the 25th percentile, and what height represents the 75th percentile?

IQR = 8

25th percentile = Q1 or 62

75th percentile= Q3 or 70

6) During a clinical study for a new diet plan, researchers separated participants into two groups:

- Group X followed the new diet plan.
- Group Y continued their normal eating habits.

At the end of the study, researchers recorded each participant's weight loss (in kilograms).

Quantitative or Qualitative data

1) Circle the correct answer choice:

a) A survey asks 100 people for their favorite color.

qualitative quantitative

b) A scientist measures the length of 50 leaves in centimeters.

qualitative quantitative

c) A study records the brand of phone each student in a class owns.

qualitative quantitative

d) A company tracks the number of products sold each day for a month.

qualitative quantitative

e) A researcher records the type of flower in a field, such as a daisy, rose, or lily.

qualitative quantitative

2) Label the statistical notation

$\bar{x}$- sample mean

s- sample standard deviation

μ- population mean

σ^2- population variance

s^2- sample variance

σ- population standard deviation

3) Circle the correct answer choice:

a) A researcher wants to study the average height of all professional basketball players. She measures the height of every player on one team.

Population Sample

b) A grocery store manager wants to know the average age of all their customers. He surveys every customer who enters the store on a specific Saturday.

Population Sample

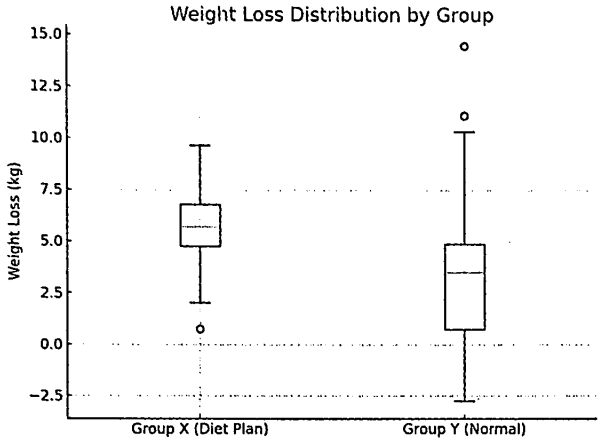
c) A quality control engineer inspects a batch of 50 randomly selected light bulbs from a factory's daily production of 50,000 bulbs.

Population Sample

d) A census taker records the age of every person living in a small town.

Population Sample

e) A marine biologist tags and tracks 20 sharks in a specific area of the ocean to learn about their migration patterns.



Use the boxplot shown below to answer the following questions:

a) Which group has the greater spread in its lower 50% of data?

group Y

b) If there were 120 individuals in Group Y, how many lost more than 5 kg?

$0.75 \cdot 120 = 90$

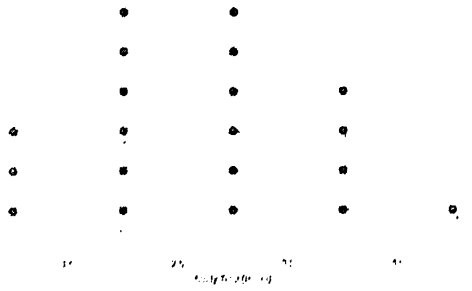
c) Which group has the least variability in its lower 25%?

group X

d) What is the five number summary for group Y? (do your best estimate)

Min = -1.76
Q1 = 0.92
Q2 = 3.52
Q3 = 4.90
Max = 14.56

7) The dot plot below shows the number of hours 20 participants spent studying for an exam. Use the graph to answer the following questions.



a) Report the ~~median~~ mode for the number of hours spent studying for the exam for this data set.

2, 3

b) Report the range for the number of hours spent studying for the exam for this data set.

5 - 1 = 4

c) Students who spent at least 2 hours studying in the MAC for the exam get extra credit on the exam . Calculate the relative frequency of these participants.

$\frac{17}{20} = 0.85$