❶ One sample has a mean of M = 4 and a second sample has a mean of M = 8. The two samples are combined into a single set of scores. **HINT:** Linear equation problem solving for an unknown.

a. What is the mean for the combined set if both of the original samples have n = 7 scores?

b. What is the mean for the combined set if the first sample has n = 3 and the second sample has n = 7?

c. What is the mean for the combined set if the first sample has n = 7 and the second sample has n = 3?

❷ A geography exam was given to samples of high school seniors and college students. The lowest possible score on the exam is 0 and the highest possible score is 75. The data showing the test scores are below:

High school seniors (Sample A):

28	30	33	35	40
40	45	40	50	55

College students (Sample B):

35	38	40	40	40
40	40	41	42	45

🌐 Find the mean, median, and mode for Sample A?

🌐 Find the mean, median, and mode for Sample B?

🌐 Based on these measures, does it appear that one group is more knowledgeable than the other? Explain.

❸ Draw a distribution with a mean of 10, a median of 20, and a mode of 30. Does it have a positive or negative skew?

Marta wants at least a 90% in History class. The grade is **based on an average** of 5 exams, each worth 100 points. On the first four exams, she earned 82, 85, 90 and 94. What is the lowest score Marta can earn on the fifth exam?

❹

During their first swim through a water maze, fifteen laboratory rats made the following number of errors (*blind alleyway entrances*):

2, 17, 5, 3, 28, 7, 5, 8, 5, 6, 2, 12, 10, 4, 3

Find the mode(s), median, and mean for these data.

Without creating a graph, would you characterize the shape of this distribution as symmetric, positively or negatively skewed?

❺

HOW ABOUT SOME AZ GEOGRAPHY STATISTICS. DID YOU KNOW THAT DESPITE ITS ARID CLIMATE, 27% OF ARIZONA IS COVERED BY FOREST. THAT'S ABOUT AS MUCH FOREST COVERAGE AS THERE IS IN FRANCE AND GERMANY?!!

On a standardized reading achievement test, the nationwide average for 7th grade children is $\mu = 7.0$. A 7th grade teacher is interested in comparing class reading scores with the national average. The scores for the 16 students in this class are as follows:

8, 6, 5, 10, 5, 6, 8, 9,

7, 6, 9, 5, 14, 4, 7, 6

Find the mean and the median reading scores.

How do both of these measures of central tendency compare to the national norm?

❻

For each of the following situations, identify the measure of central tendency (mean, median, or mode) that would provide the best description of the "average" score:

a. A researcher asks each individual in a sample of 50 adults to name his or her favorite season.

b. An insurance company would like to determine how long people remain hospitalized after a routine appendectomy. The data from a large sample indicate that most people are released after 2 or 3 days but a few develop infections and stay in the hospital for weeks.

c. A teacher measures scores on a standardized reading test for a sample of children from a middle-class, suburban elementary school.

❼

"STATISTICS MEANS NEVER HAVING TO SAY YOU'RE CERTAIN."

Solve the following problems: ❽

a. A sample of n = 12 scores has a mean of M=6. What is the value of ΣX for this sample?

b. A sample of N = 5 scores has a mean of M = 8. If one new person with a score of X = 2 is added to the sample, what will be the value for the NEW mean?

c. A sample of N=10 scores has a mean of M = 9. If one score with a value of X=12 is removed from the sample, what will be the NEW value for the sample mean?

d. A sample of n = 6 scores has a mean of M = 10. If one score is changed from X = 14 to X = 2, what will be the value for the NEW sample mean?

Find the mean, median and mode for the set of scores in the following frequency distribution table:

X	f
10	1
9	9
8	5
7	3
6	1
5	1

❾