

- *1. Describe the general purposes of descriptive statistics and inferential statistics.
2. Define the terms *population* and *sample*, and explain how each of these is involved in the process of scientific research.
6. A researcher reports that individuals given a special diet containing large amounts of oat bran had substantially lower cholesterol levels than individuals placed on a diet with no oat bran. For this study, identify the independent variable and the dependent variable.
8. A researcher studying sensory processes manipulates the loudness of a buzzer and measures how quickly subjects respond to the sound at different levels of intensity. Identify the independent and dependent variables for this study.
9. A researcher would like to evaluate the claim that large doses of vitamin C can help prevent the common cold. One group of subjects is given a large dose of the vitamin (500 mg per day), and a second group is given a placebo (sugar pill). The researcher records whether or not each individual experiences a severe cold during the 3-month winter season. For this study:
- Identify the dependent variable.
 - Is the dependent variable discrete or continuous?
 - What scale of measurement (nominal, ordinal, interval, ratio) is used to measure the dependent variable?
 - What research method is being used (experimental, correlational, quasi-experimental)?
14. Three researchers are evaluating taste preferences among three leading brands of cola. After subjects taste each brand, the first researcher simply asks each subject to identify his/her favorite. The second researcher asks each subject to identify the most preferred, the second most preferred, and the least preferred. The third researcher asks each subject to rate each of the colas on a 10-point scale, where a rating of 1 indicates "terrible taste" and 10 indicates "excellent taste." Identify the scale of measurement used by each researcher.

15. A researcher records the number of errors each subject makes while performing a standardized problem-solving task.
- Is the researcher measuring a discrete or a continuous variable?
 - What scale of measurement is being used?

18. Two scores, X and Y , are recorded for each of $n = 4$ subjects. For these scores, find the value of each expression.

	SUBJECT	X	Y
a. ΣX	A	3	2
b. ΣY	B	4	1
c. ΣXY	C	2	3
	D	6	4

22. For the following set of scores, find the value of each expression:

a. ΣX	X
b. ΣX^2	3
c. $\Sigma(X + 3)$	-2
	0
	-1
	-4