

Define the following terms.

1. data
2. sampling
3. dependent variable
4. independent variable
5. theory

Circle the correct answer

6. A field biologist who studies the behavior of birds in a rain forest most likely collects data through
 - a. experimenting.
 - b. modeling.
 - c. observing.
 - d. inferring.
7. Constructing a graph is an example of
 - a. measuring.
 - b. organizing data.
 - c. observing.
 - d. predicting.
8. Of the following steps in a scientific investigation, the last to be done is usually
 - a. experimenting.
 - b. observing
 - c. producing a model.
 - d. hypothesizing.
9. A statement that explains observations and can be tested is called
 - a. a hypothesis.
 - b. an inference.
 - c. a theory.
 - d. a model.
10. A visual, verbal, or mathematical explanation that is supported by data is called
 - a. a hypothesis.
 - b. an inference.
 - c. a theory.
 - d. a model.
11. What are quantitative data? Give two examples of quantitative data.
12. What two features must a sample have if it is to accurately represent a population?
13. How are a hypothesis, a prediction, and an experiment related?
14. What are some of the things scientists might do to analyze data?

A scientist wanted to study the effect of a drug on the blood pressure of rats. She set up an experiment in which the experimental group consisted of rats that were injected with a salt solution containing the drug.

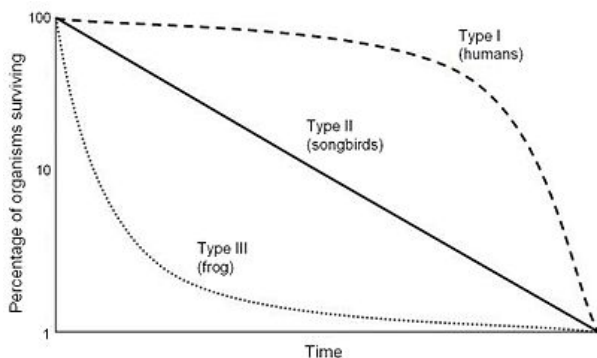
15. What should the control group have consisted of?
16. What were the dependent and independent variables in her experiment?

UNDERSTANDING POPULATIONS**Contrast the following terms.**

1. population density, dispersion
2. mortality rate, life expectancy

Circle the correct answer

3. One can estimate a population's size by counting individuals in a sample of the population if the
 - a. distribution of individuals in the sample is the same as that in the population.
 - b. density in the sample is greater than the population density.
 - c. dispersion in the sample is less than that in the population.
 - d. sample size is larger than the population size.
4. A random distribution of individuals in a population would be most likely to result from
 - a. clumped food resources.
 - b. territorial behavior by the individuals in the population.
 - c. herding behavior by the individuals in the population.
 - d. the dispersal of seeds by the wind.
5. Although the United States has a larger total population than Japan, population density is greater in Japan because the
 - a. people in the United States have less education and medical care.
 - b. people in Japan all live in the cities.
 - c. geographical area is greater in the United States.
 - d. birth rate is lower than the death rate in Japan.
6. A population is likely to grow most rapidly if it has
 - a. a high percentage of old individuals.
 - b. a high percentage of young individuals.
 - c. about the same percentage of individuals in each age range.
 - d. individuals with a low birth rate.

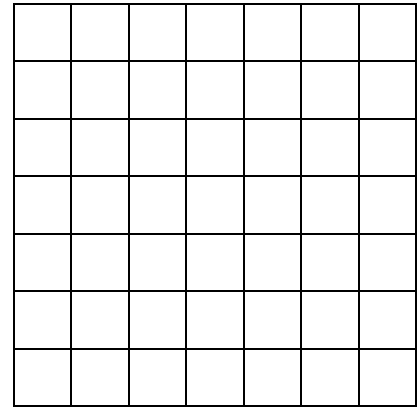


5. In a population with a Type I survivorship curve, the likelihood of dying is

- a. low until late in life, when it increases rapidly.
- b. high early in life and much lower in older individuals.
- c. high early in life and late in life, but much lower in middle-aged individuals.
- d. fairly constant throughout life.

1. Plot the following points on your graph:

- (1800, 1 billion people)
- (1930, 2 billion people)
- (1960, 3 billion people)
- (1975, 4 billion people)
- (1987, 5 billion people)
- (1999, 6 billion people)



2. Draw a line connecting the points.

Answer the following questions.

3. What does the curve that you have drawn indicate about human population growth?

Year

4. Do you think the human population can continue to grow indefinitely? Why or why not?

Thinking Critically

Demographers often use mathematical formulas to predict population changes, but demography actually has more to do with understanding human behavior. Predicting demographic trends is as difficult as predicting human behavior. A family choosing to abandon the city rat race and move to a small town, or a young woman waiting until after college to marry and have children—these are the stories behind the statistics. It’s hard to predict the exact patterns of America’s future population, but we know the pattern will be formed from the individual choices of millions of human beings. To understand population, you have to understand people.

1. People from other countries still immigrate to the United States each year. What direct and indirect effects does this have on the population?

2. What do you think will be the main factors influencing the number of children born to people of your generation?

3. What features characterize most developing countries?

Explain the relationship between the terms in each of the following groups of terms.

1. Growth rate, birth rate, death rate
2. Exponential growth, limiting factor

Circle the correct answer

1. If a country's per capita growth rate is 0.01 and its present population is 50,000,000, what will the population be one year from now?
a. 500,000 b. 50,500,000 c. 60,000,000 d. 500,000,000
2. The exponential model of population growth applies
a. when there are no limiting factors.
b. if the birth rate increases as the population grows.
c. when the population size exceeds the carrying capacity.
d. to all real populations that exist in nature.
3. One example of a density-dependent limiting factor is a
a. forest fire.
b. flood.
c. period of very severe weather.
d. shortage of nesting sites.
4. Which of the following is not a threat to the survival of small populations?
a. breeding in captivity
b. inbreeding
c. habitat destruction
d. disease outbreaks

Define the following terms.

1. hunter-gatherer lifestyle
2. agricultural revolution
3. developed country
4. developing country