

**Short Answer (4 points each, no partial credit)**

1. Identify the fallacy in the following argument. \_\_\_\_\_

*There is no evidence that our products cause cancer. Therefore our products are perfectly safe.*

2. Identify the fallacy in the following argument. \_\_\_\_\_

*Each of my brother's three dogs has fleas. Therefore all dogs must have fleas.*

3. The currency exchange rate between dollars and rupees is \$1 = 35.80 rupees. Complete the following statement: 1 rupee is worth \$ \_\_\_\_\_.

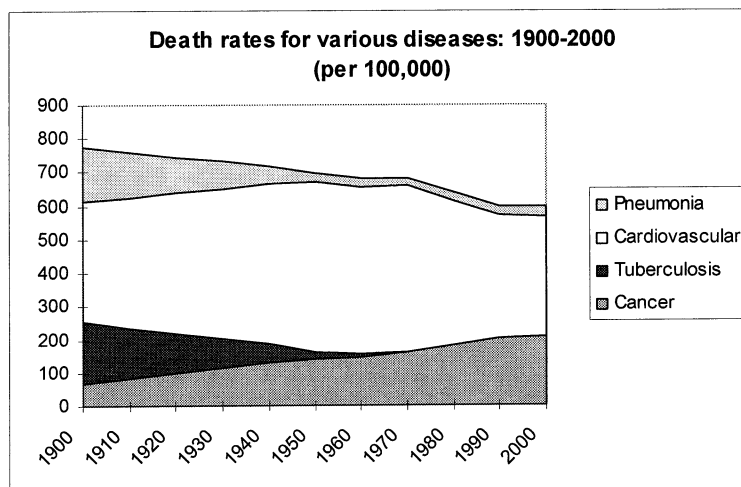
4. If the price of gasoline increased by 50% in August and then decreased by 50% in September, was the price of gasoline *unchanged* over the two-month period?  
\_\_\_\_\_

5. The numbers of deaths due to cancer for males and females in 2004 were approximately 290,000 and 270,000, respectively. Fill in the blank: The number of cancer deaths among males was \_\_\_\_\_ percent greater than among females.

6. The 630 women at the conference accounted for 60% of all people attending. How many people attended the conference?  
\_\_\_\_\_

7. With the goal of finding the average amount of daily sleep for all American cocker spaniels, researchers randomly selected 100 cocker spaniels, two from each state. What method of sampling was used?  
\_\_\_\_\_

8. Researchers wish to determine if smoking improves college students' grades. What kind of statistical study should be conducted?  
\_\_\_\_\_



9. Using the figure above, estimate the death rate due to pneumonia in 1900.

\_\_\_\_\_

10. Suppose you deposit \$10,000 in an account with an APR of 6%. Which compounding would you prefer (for the largest balance): daily, annual, monthly, or quarterly?

\_\_\_\_\_

11. A bag contains four red marbles, three blue marbles, and five green marbles. If one marble is randomly selected from the bag, what is the probability that it is blue or green?

\_\_\_\_\_

12. A musician plans to play four pieces of music. In how many ways can she arrange the selection of her pieces if she has six pieces to choose from?

\_\_\_\_\_

13. License plates in Colorado have three numbers (0–9) and three letters (A–Z). How many different plates are possible if repetition of numbers and letters is allowed?

\_\_\_\_\_

**Partial Credit (6 points each)**

1. Suppose you plan to put carpet in a rectangular room that measures 15 feet by 13 feet. The carpet you want costs of \$23.50 per square yard and is not available in fractions of a square yard. How much will the carpet cost? Be sure to show the use of units.

2. In a recent survey of 700 people, 250 people were women, 300 people had heart disease, and 60 of the women had heart disease.
- Create a Venn diagram with numbers showing the distribution of the 700 people in the survey with respect to gender and heart disease.

b. How many females did not have heart disease?

3. Marine biologists following the progress of a great white shark named Nicole (after Nicole Kidman) recently confirmed that the shark had traveled 20,000 kilometers in nine months.

a. How far did the shark travel in meters, written in scientific notation?

b. How far did the shark travel in miles?

4. Between 1990 and 2000, the population of the Denver-Boulder metropolitan area increased by 31% to 2.6 million.

a. What was the population of this region in 1990?

b. If the population increases by the same percentage over the next decade (between 2000 and 2010), what will the population be in 2010?

5. Assume that the world population continues to grow at the current rate of 1.6% per year and that the population in 2000 was 6 billion people.

a. What is the doubling time for the population?

b. According to this model, what will the world population be in 2055?

6. Survey subjects were asked if they agree with the statement, "Marijuana should be subject to the same federal controls as alcohol." The results are shown in the table to the right.

	Democrats	Republicans
Agree	250	300
Disagree	150	600

a. If one survey subject is chosen at random, what is the probability that the person is a Democrat?

b. If one survey subject is chosen at random, what is the probability that the person is a Republican or someone who agrees with the statement?

c. If two different survey subjects are selected at random, what is the probability that they are both Republicans?

7. Suppose you deposit \$500 per month into a savings plan that pays an APR of 8%.

a. What is the balance in the plan after 18 years?

b. How much of this balance did you actually deposit?

8. Suppose you need to borrow \$190,000 for a new home. The bank offers you a 30-year mortgage with a fixed APR of 6%:

a. Calculate the monthly payment for the loan.

b. Determine your total monthly payments over the term of the loan.

*HAVE A GOOD HOLIDAY*