**Assignment: Applications Involving Logarithms**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_

**Solve. (Round to the nearest hundredth.)**

1. 2. 3.

4. The cost of tuition at a college is $12,000 and is increasing at a rate of 6% per year. Find the cost of tuition in 4 years.

5. A piece of machinery is valued at $250,000 depreciates at 12% per year. After how many years will the value have depreciated to $100,000?

6. The average weight *y* (in kilograms) of an Atlantic cod from the Gulf of Maine can be modeled by where *x* is the age of the cod (in years). Estimate the age of a cod that weighs 13 kilograms.

7. The amount of a 10-mg dose of a certain antibiotic decreases in your bloodstream at a rate of 16% per hour. Find the amount of antibiotic in your bloodstream after 4 hours.

8. Membership of a local club grows at a rate of 7.8% every year. If it currently has 30 members, how long will it take the membership to double?

9. In 1950, a U.S. populate model was million people, where  is the year. What did the model predict the U.S. population would be in the year 2000?

F 247 million G 255 million H 263 million J 288 million

**Solve.**

10. 11.

12.

13. 14.

15.