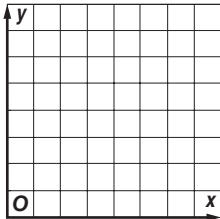


8-2 Word Problem Practice

Solving Exponential Equations and Inequalities

1. BANKING The certificate of deposit that Siobhan bought on her birthday pays interest according to the formula $A = 1200 \left(1 + \frac{0.052}{12}\right)^{48}$. What is the annual interest rate?

2. INTEREST Marty invested \$2000 in an account that pays at least 4% annual interest. He wants to see how much money he will have over the next few years. Graph the inequality $y \geq 2000(1 + 0.04)^x$ to show his potential earnings.



3. BUSINESS Ahmed's consulting firm began with 23 clients. After 7 years, he now has 393 clients. Write an exponential equation describing the firm's growth.

4. POPULATION In 2000, the world population was calculated to be 6,071,675,206. In 2008, it was 6,679,493,893. Write an exponential equation to model the growth of the world population over these 8 years. Round the base to the nearest thousandth.

Source: U.S. Census Bureau

5. BUSINESS Ingrid and Alberto each opened a business in 2000. Ingrid started with 2 employees and in 2003 she had 50 employees. Alberto began with 32 employees and in 2007 he had 310 employees. Since 2000, each company has experienced exponential growth.

- a. Write an exponential equation representing the growth for each business.
- b. Calculate the number of employees each company had in 2005.
- c. Is it reasonable to expect that a business can experience exponential growth? Explain your answer.