Compound Interest Practice

Compound Interest Formula 

A = final amount P = principle (starting amount) n = # times compounding t = time r= rate ( change % to decimail)

What is the value of n for the following types of compounding?

semi-annually \_\_\_\_\_ quarterly \_\_\_\_\_\_ monthly \_\_\_\_\_\_ daily \_\_\_\_\_\_

1. You deposit $1000 in an account that earns 2.5% annual interest. Find the balance after 3 years if this interest is compounded …

A. quarterly B. monthly C. daily

Solve the following problems. Round appropriately. SHOW ALL WORK!

2. If Christopher Columbus invested $.01 on the Native American Bank upon arriving in the New World, how much money would be in his account today if his terms were 4% interest compounded monthly?

3. What if Columbus had invested his money at the Indigenous Peoples’ Credit Union where they were offering 4¼% compounded semi-annually? How much would his account be worth today?

4. Which investment option yields the greater balance?

A. Investing $2000 in an account that pays 9% interest compounded monthly for 15 years?

B. Investing $2000 in an account that pays 10% interest compounded annually for 15 years?

5. You want to have $10,000 in your account after five years. Find the amount your initial deposit should be for each of the following situations.

A. The account pays 3.5% annual interest compounded monthly.

B. The account pays 2.75% annual interest compounded quarterly.

6. You invest $500 into a savings account that is compounded daily at an interest rate of 4¾%. How much money do you have after 10 years?

***CONTINUOUSLY COMPOUNDED***



7. P = $ 18,000, r = 6.5 %, t = 10 years.

8. P = $ 5000, r = 10 %, t = 10 years.

9. A= $ 28,000 r = 12 %, t = 20 years. Find P

10. A= $ 55,000 , r = 10 %, t = 40 years. Find P

**Base e applications**

11. Air pressure ate sea level is about 14.7 pounds per square inch. As the altitude h ( in feet above sea level) increases, the air pressure decreases. This relationship is modeled by:   Mount Everest is 29,028 feet at its peak. What is the air pressure at the top of Mt. Everest?

12. A certain type of bacterium increases according to the model  where t is the time in hours. Find P when t is 5 hours.

13. The population of a town increases according to the model  where t is in years in 1990. Estimate the population of the town in 2020.