

Calculate the interest earned in the following scenario (write your setup down for each to get credit, even though you obviously will be doing the calculations on your calculator). Round each to the nearest penny.

You deposit \$7500 in a bank account that earns 3% per year, you leave the money there for 8 years, and interest is compounded...

1. Annually  $A = P\left(1 + \frac{r}{n}\right)^{nt}$

2. Quarterly

3. Monthly

4. Weekly

5. Daily

6. Continuously (remember, this one uses a different formula):  $A = Pe^{rt}$

A slightly different set of problems:

You want to have \$2000 after 3 years. If you have a CD Savings account that will pay 5% interest, how much do you need to deposit now to end up with \$2000 if your compounding is...

7. Monthly

8. Continuous

(continued on back)

Calculate the interest earned in the following scenario (write your setup down for each to get credit, even though you obviously will be doing the calculations on your calculator):

You deposit \$5000 in a bank account that earns 1.5% per year, you leave the money there for 5 years, and interest is compounded...

9. Monthly

10. Continuously

11. Daily

12. Quarterly

The following problems involve exponential growth or decay (where the numbers get exponentially smaller over time). For each please write the formula with the appropriate value filled in, then find the answer using your calculator.

13. I bought a car for \$25,000. Its value is depreciating at a rate of 10% per year and can be found using the following formula:

$V = 25000(.9)^x$  where V is the current value, and x is the number of years I have owned the car. How much will my car be worth after 8 years?

14. In 1996 there were 2573 computer virus incidents. During the next 7 years the number of incidents increased by about 92% each year as shown by this formula:  $I = 2573(1.92)^x$  where I is the number of virus incidents, and x is the number of years since 1996. About how many incidents were there in 2003?

15. You buy a computer for \$1100. You estimate that the value of the computer will go down about 25% per year, following this formula:  $V = 1100(.75)^x$  where V is the current value, and x is the number of years you own the computer. What will the estimated value be after 4 years?