

PC 3-2 Interest Formula Practice Problems

In the following problems, find the amount that results from each investment

1. \$100 invested at 4% compounded quarterly after a period of 2 years.

2. \$50 invested at 6% compounded monthly after a period of 3 years.

3. \$10 invested at 11% compounded continuously after a period of 2 years.

Determine the principal needed now to get each amount; that is, find the present value.

4. How much do you need to invest now to get \$100 in 2 years at 6% compounded monthly?

5. How much do you need to invest now to get \$75 after 3 years at 8% compounded quarterly?

6. How much do you need to invest now to get \$600 after 2 years at 4% compounded continuously.

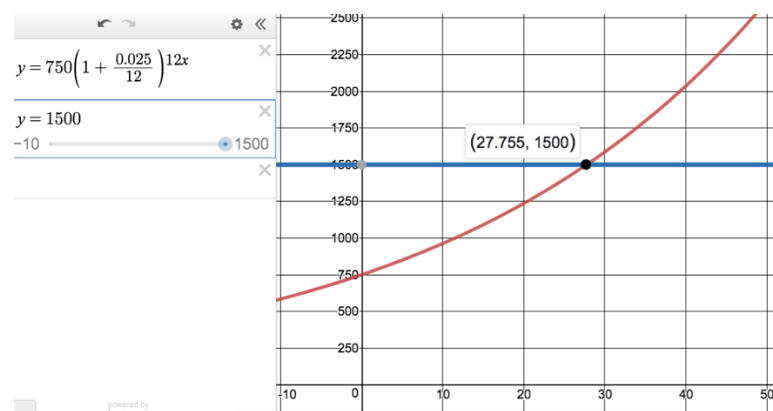
Determine how long it takes for each investment to double in value.

7. An investment at 10% APR compounded quarterly. How long to double the investment?

8. An investment at 10% APR compounded monthly. How long to double the investment?

9. An investment at 10% APR compounded continuously. How long to double the investment?

Below are the graphs of $y = 750 \left(1 + \frac{.025}{12}\right)^{12(t)}$ and $y = 1500$, where t is time(years) and y is dollars.



Answer the questions based on the context of the interest problems we've been working on.

10. What does the x-axis represent?

11. What does the y-axis represent?

12. What does the intersection of the two lines represent?

Solve the problems algebraically, then check your solution using a graphing utility.

13. Zanaya deposits \$2,350 into an account with 4.6% interest, compounded quarterly. When will she have \$3050?

14. Alexis deposits \$8,100 into an account with 3.6% interest, compounded monthly. When will he have \$10,000?

15. Laura deposits \$12,500 into an account with 2.6% interest, compounded continuously. When will she have \$14,500?

16. Examine the results from the previous 3 problems involving Zanaya, Alexis, and Laura. Over approximately the 5 ½ years it took for each to reach their goal, who made the most money? Why?

17. Solve for x.

$$12^{x+9} = 7^{3x-4}$$

18. Solve for x.

$$8^{4x+1} = 9^{x-3}$$