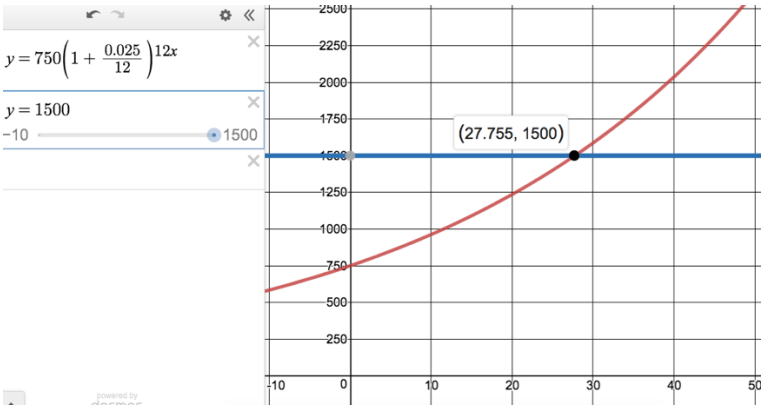
PC 4-4 Interest Formula Practice Problems

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.

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