

6.1 Compound Interest DAY THREE CYU

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Solving Compound Interest Problems	1	2, 5 - 8	9, 10
Understanding different compounded amounts	1	2, 5 - 8	
Error Analysis		3, 4	

1. **PROBLEM SOLVING** You deposit \$5000 in an account that pays 2.25% annual interest. Find the balance after 5 years when the interest is compounded quarterly.

2. **DRAWING CONCLUSIONS** You deposit \$2200 into three separate bank accounts that each pay 3% annual interest. How much interest does each account earn after 6 years?

Account	Compounding	Interest after 6 years
1	quarterly	
2	monthly	
3	daily	

3. **ERROR ANALYSIS** You invest \$500 in the stock of a company. The value of the stock decreases 2% each year. Describe and correct the error in writing a model for the value of the stock after t years.

X $y = \left(\frac{\text{Initial}}{\text{amount}} \right) \left(\frac{\text{Decay}}{\text{factor}} \right)^t$

$y = 500(0.02)^t$

4. **ERROR ANALYSIS** You deposit \$250 in an account that pays 1.25% annual interest. Describe and correct the error in finding the balance after 3 years when the interest is compounded quarterly.

X $A = 250 \left(1 + \frac{1.25}{4} \right)^{4 \cdot 3}$

$A = \$6533.29$

Use the given information to find the amount A in the account earning compound interest after 6 years when the principal is \$3500.

5. $r = 2.16\%$, compounded quarterly

6. $r = 2.29\%$, compounded monthly

7. $r = 1.83\%$, compounded daily

8. $r = 1.26\%$, compounded monthly

9. **USING STRUCTURE** A website recorded the number y of referrals it received from social media websites over a 10-year period. The results can be modeled by $y = 2500(1.50)^t$, where t is the year and $[0, 9]$. Interpret the values of a and b in this situation. What is the annual percent increase? Explain.

10. **PROBLEM SOLVING** The population p of a small town after x years can be modeled by the function $p = 6850(1.03)^x$. What is the average rate of change in the population over the first 6 years? Justify your answer.

CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

