Name Key Date _____ Pd ___

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.

$5593.60

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	$432.11
2	monthly	$433.29
3	daily	$433.86

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 $y = (\text{Initial amount})(\text{Decay factor})^t$

$y = 500(0.02)^t$

% decrease needs to be subtracted from 1 for decay factor.

$y = 500(0.98)^t$

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

$A = \$6533.29$

% rate was not converted to a decimal.

$A \approx \$259.54$

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

$3982.92

6. r = 2.29%, compounded monthly

$4,014.98

7. r = 1.83%, compounded daily

$3,906.18

8. r = 1.26%, compounded monthly

$3,774.71

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.

a= initial # of referrals
b= growth factor of 1.50
r= 0.5 or 50% increase

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.

≈221.5 people per year

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.