Name _____ Date _____

Compound Interest: Growth Over Three Years

Directions: Each account in the table compounds its interest once a year, so work through the growth one year at a time. Type numbers only in the answer boxes, without dollar signs, percent signs or commas.

Three Compounding Accounts

Three savings accounts that each pay interest compounded once a year, which means each year's interest is added to the balance before the following year's interest is calculated. No money is added or withdrawn after the starting deposit.

Saver	Starting deposit (dollars)	Yearly interest rate	Years in the account
Amara	1,000	10%	3
Kwame	2,000	5%	2
Lucia	500	20%	3

1. Once the first year's interest has been added to her balance, how much will Amara's account hold at the end of its first year? Type your answer without a comma.

_____ dollars

2. During its second year, how much interest does Amara's account earn, considering that the interest is now calculated on the larger balance rather than on the original deposit?

_____ dollars

3. Continuing to compound once a year, what will Amara's balance be at the end of all three years in the account? Type your answer without a comma.

_____ dollars

4. Over the full three years, how much interest has Amara's account accumulated altogether, beyond her original deposit?

_____ dollars

5. Suppose Amara's same $1,000 earned simple interest at 10% a year instead, calculated on the starting deposit only; over the same three years, which kind of interest pays her more, and by how much?

A. Compound interest pays more, by $31

B. Neither, because both pay $300 at the same 10% rate

C. Simple interest pays more, by $31

D. Compound interest pays more, by $331

6. Pair each term that describes how savings accounts grow with the definition that matches it.

Write the letter of the matching answer on each line.

1. _____ Compound interest
2. _____ Simple interest
3. _____ Compounding period
4. _____ Principal

Choices for question 6

A. Interest that is figured on the first deposit alone, so it comes to the same amount every year

B. Interest that is figured each period on a balance that already includes earlier interest

C. How often earned interest is added to the balance, such as annually

D. A penalty charged for withdrawing money before a specified date

E. The money originally placed in the account at the very beginning

7. Which two statements describe how Amara's account compounds during the three years shown?

☐ A. Her interest rate automatically increases by 10% each year.

☐ B. In years two and three, interest is calculated on the balance that includes the previous year's interest.

☐ C. Each year's interest is calculated on her original $1,000 deposit alone.

☐ D. The bank subtracts the previous year's interest from the balance.

☐ E. At the end of each year shown, the interest earned that year is added to her account balance.

8. Kwame's account compounds once a year for its two years, so what will his balance be when those two years are finished? Type your answer without a comma.

_____ dollars

9. Although Lucia's deposit is the smallest, it earns a considerably higher rate; what will her balance be after three years of compounding once a year?

_____ dollars

10. Allowing each account to grow for its own number of years shown in the table, whose account earns the most interest in total among the three savers?

A. Amara's account B. Lucia's account C. Kwame's account