

Name _____

Date _____

NOW YOU TRY STUDENT WORKSHEET
9th - 10th Grade

ANNUAL INTEREST

1. Taylor wants to invest her **\$7,500** college fund at her bank. She picks an **annual certificate of deposit** that will pay her **3%** annually. (Remember, **3% interest** is .03 when written as a decimal.)

A. How much **interest** will Taylor earn for the year?

B. What will Taylor's **balance** be when the certificate is over?

2. Now, if Taylor decides to leave her money in the bank for three years:

A. What is the **term** of Taylor's **certificate of deposit**?

B. Fill in the table to find out how Taylor's investment grows:

	Beginning Balance	3% Interest	Ending Balance
Year 1	\$7,500		
Year 2			
Year 3			

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ANNUAL vs. QUARTERLY INTEREST

3. Taylor wants to invest her **\$7,500** college fund at her bank. She decides to open a **statement savings account, compounding quarterly**, instead of an **annual certificate of deposit**. This statement savings account will pay her a **3% APR**. (Remember, **3% interest** is .03 when written as a decimal.)

A. How often does Taylor's account compound?

B. What will Taylor's 1st quarter **interest** payment be?

C. What will Taylor's **balance** be when the year is over?

	Beginning Balance	3% Interest	Ending Balance
1 st Quarter	\$7,500		
2 nd Quarter			
3 rd Quarter			
4 th Quarter			

D. What **APY** will Taylor's statement savings account earn her for the year?

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Compound Interest Formula

There is a formula you can use to calculate the ending balance of an investment if you know certain facts about the investment, such as: **principal**, **APR**, **compounding periods**, and the number of years the investment lasts.

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Where: A = Accumulated Balance

P = Principal

r = APR expressed as a decimal

n = number of compounding periods/year

t = number of years the investment lasts

Let's look again at question 3 on page 2:

Taylor wants to invest her **\$7,500** college fund at her bank. She decides to open a **statement savings account, compounding quarterly**, instead of an **annual certificate of deposit**. This statement savings account will pay her a **3% APR**. (Remember, **3% interest** is .03 when written as a decimal.)

4. Complete Taylor's information below.

Principal =

APR =

Number of compounding periods =

Number of years the investment lasts = 1

Use the **compound interest formula** to compute her balance at the end of the year.

How does your answer compare to the answer you got in question 3 when you completed the table?

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QUARTERLY vs. MONTHLY INTEREST

Andrea wants to invest **\$2,000** at her bank. She decides to open a **money market savings account**, compounding monthly, instead of a **statement savings account**. This **money market savings account** will pay her a **3% APR**. (Remember, **3% interest** is .03 when written as a decimal.)

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

5. Complete Andrea's information below.

Principal =

APR =

Number of compounding periods =

Number of years the investment lasts = 1

Use the **compound interest formula** to compute her balance at the end of the year:

A. What will Andrea's **money market account balance** be at the end of the year?

B. What **APY** will Andrea's **money market account** earn her for the year?