**Name:** _____

## *Compound Interest*

**Compound Interest:** Compound interest is the money earned from a determined set interest per year. The total amount earned from interest each year is added to the beginning balance, then interest is accumulated once again. This process is repeated each year that you roll the balance over.

*For example:* Let's say you saved $200 a year at an interest rate of 3% compounded. To find out how much money that interest will equal every year, you have to change the percent into a decimal and then multiply.

$$\$200 \text{ X } .03 = \$6$$

So that means $200 + $6 = $206 after year 1

Since this is compounded interest, that means you will continue into year 2 at 3% interest but this time it will be applied to $206 instead of the starting amount of $200. This process is repeated until you discontinue your savings plan. The reason compound interest is so awesome is because your money increases even more the longer you save. Compound interest is ever growing!

Compute the following equations in the table to determine the compounded interest over a span of 6 years by just saving $200 once time. You may use a calculator. Don't forget to change your percent into a decimal.

| Starting Amount | Interest Rate | Interest Earned | Year # | Final Equation Total |
|---|---|---|---|---|
| $200    X | 3% or .03 | =    $6 | 1 | $200 + $6 = $206 |
| $206    X | 3% or .03 | =    $6.18 | 2 | $ 206 + $6.18 = $212.18 |
| $212.18  X |  | = |  3 | $212.18 + $6.36 = $218.54 |
|         X | 3% or .03 | =    $6.55 |  |  |
| $225.09  X |  | =    $6.75 | 5 | $225.54 +         = |
| $231.84  X | 3% or .03 | = |  | $231.84 + 6.95 = |

**Directions:** Answer the following questions using what you calculated in the table. Show all work and explain your thinking.

1.  What is the total balance of this account at the end of year 6?

2.  What is the total interest earned by the end of 6 years? What equation did you write to solve this?

3.  Which year had the highest interest earned? How much was it?

4.  Explain how the interest earned each year steadily increased over time.