April 2020

Interest

When you borrow money from a bank, you will later have to pay them back the money they loaned you plus 'interest', which is extra money on top of what you borrowed. The extra money ('interest') they get from you is what makes it worth it for them to loan you money.

So if I borrow $500 from the bank, they may ask for their money to be paid back in 3 years plus 10% interest, which is 10% per year of the $500 I originally borrowed. So here's what I'd owe the bank:

$500 borrowed at 10% per year for 3 years.. Simple Interest

Year	Money Owed to the Bank	Interest Paid this year (10% of original $500)	Total Owed Back to the Bank
1	$500	$50	$550
2	$550	$50	$600
3	$600	$50	$650
4	$650	$50	$700

The above example is called **simple interest**, where I'd pay 10% on the amount of money I originally borrowed each year (in this case, 10% of $500 is $50, so I owe the bank an extra $50 per year until I pay them back).

Another kind of interest is called **compound interest**, which is different than simple interest because each year I'd pay interest on the new total I owed them at the end of each year, not just on the original amount I borrowed. Check out how that'd look different if I had to pay interest on the total I owed to the bank at the end of each year, instead of just what I borrowed initially:

$500 borrowed at 10% per year for 3 years.. Compound Interest

Year	Money Owed to the Bank	Interest Paid this year (10% of Each New Total)	Total Owed Back to the Bank
1	$500	$50	$550
2	$550	$55	$605
3	$605	$60.50	$665.50
4	$665.50	$66.55	$732.05

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Now you try. Calculate the difference in simple vs compound interest in the following scenarios. Use a calculator, but complete the charts.

1) Borrowing $750,000 at 4% per year for 5 years.

SIMPLE INTEREST		
Money Owed to the Bank	Interest Paid (4% of $750,000)	Total Owed to the Bank in the end

COMPOUND INTEREST		
Money Owed to the Bank	Interest Paid (4% of total owed)	Total Owed to the Bank in the end

2) Borrowing $300 at $20% per year for 4 years.

SIMPLE INTEREST		
Money Owed to the Bank	Interest Paid (20% of $300)	Total Owed to the Bank in the end

COMPOUND INTEREST		
Money Owed to the Bank	Interest Paid (20% of total owed)	Total Owed to the Bank in the end

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