Simple and Compound Interest

Interest is the cost of borrowing money or the reward for saving it. This worksheet explores two types: simple and compound interest.

Part A: Simple Interest

1. Find the simple interest earned on an investment of $800 at a rate of 5% per annum (p.a.) for 4 years.

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2. Calculate the total amount you would have if you invested $3,000 at 4.5% p.a. simple interest for 5 years. (Hint: Total Amount = Principal + Interest).

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3. A loan of $10,000 has a simple interest rate of 8% p.a. How much interest is owed after 6 months?

Part B: Compound Interest (Compounded Annually)

4. Calculate the final amount if $800 is invested at 5% p.a. compounded annually for 4 years.

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5. You invest $3,000 at 4.5% p.a. with interest compounded yearly. What is the total value of your investment after 5 years?

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6. Find the total interest earned on an investment of $20,000 at 7% p.a. compounded annually for 3 years. (Hint: Interest = Final Amount - Principal).

7. **Simple vs. Compound:**

(a) Sarah invests $10,000 at 6% p.a. simple interest for 3 years. How much interest does she earn?

(b) Ben invests $10,000 at 6% p.a. compounded annually for 3 years. How much interest does he earn?

(c) Who earns more, and by how much?

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8. You take out a loan of $15,000 to help pay for your studies. The interest rate is 8% p.a. compounded annually. If you make no repayments for 2 years, how much will you owe in total at the end of the 2 years?

9. A vintage car is purchased for $50,000 as an investment. Its value is predicted to appreciate (increase) by 10% each year, compounded annually. What is its predicted value after 4 years?