EQUITY
LEARNING PLACE

Elementary Math Topical (Simple and Compound Interest)

Question 1:

Aldric received an interest of $6159 from an investment that offers compound interest at 3.5% per annum after 10 years. What is the initial investment amount? Correct your answer to the nearest dollar.

Question 2:

Don wishes to deposit $3200 in a bank account for 24 months and has 2 options to consider. Bank A pays 6% per year simple interest while Bank B offers compound interest at 5.9% per annum. Which Bank should Don deposit his money in? You must show your calculations.

Question 3:

A company takes up a loan from a bank. The bank charges an annual interest rate of 4% compounded quarterly. When the loan matures in 3.5 years, the company is projected to pay a total interest of $100,000. Calculate the original sum of the loan, giving your answer correct to the nearest dollar.

Question 4:

A bank offers simple interest rate of 2% per annum for deposits. Adam deposits $8 000 into the bank.

a) Calculate the interest he will get at the end of 8 years.

b) Calculate the total amount that will be in his account at the end of 8 years.

c) A hedge fund firm offers compound interest rate of 8% per annum compounded half-yearly. Chuni decides to invest $5000 into the hedge fund account. Find the profit that Chuni should make after 4 years.

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Question 5:

Amirul has enrolled in a Science course at the National University of Singapore. The tuition fee for his course is $50 000. As a Singaporean, Amirul enjoys a government subsidy of 55% off his tuition fee. His parents have also agreed to pay 25% of the subsidised tuition fee.

a) Find the remaining amount that Amirul has to pay for his Science course.

Amirul decides to take a study loan to pay the remaining tuition fee. There are two loan schemes available for him to choose.

Scheme A: Simple interest of 6% per annum, with the loan payable over 6 years.

Scheme B: Compound interest of 4.8% per annum compounded yearly, with the loan payable over 5 years.

b) Find the total amount payable for Scheme A.

c) Find the total amount payable for Scheme B.

d) With Amirul's part time job, he is able to afford a maximum instalment of $330 per month. Which scheme should Amirul choose? You must show all your workings clearly.

Question 6:

Jack has $100,000 to invest. He can either invest his money in Scheme *A* which earns 3% simple interest annually or in Scheme *B* which earns him 1.5% interest per annum compounded half yearly. Showing your calculations clearly, determine which scheme would give him more returns at the end of 5 years.

Question 7:

Michael intends to set up a cafe and he needs to take a loan of $80 000. There are 2 options offered by Bank *A* and Bank *B*.

Bank *A* charges a simple interest of 2.5% per annum for 5 years.

Bank *B* charges a compound interest of 3% per annum, compounded half-yearly for 4 years.

a) Calculate the amount of each monthly payment if Michael takes the offer from

i) Bank A

ii) Bank B

b) Explain with 2 possible reasons, which bank Michael should choose from.

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Question 8:

Mr Lim invested $15000 in an account for 2 years which pays *x* % per year where the interest is compounded quarterly. Given that Mr Lim received $15640 when he closed the account, find the value of *x*.

Question 9:

Mrs Yang has $50 000 to invest. Bank A offers 2% per annum simple interest. Bank B pays 1.5% per annum compound interest compounded yearly.

a) At the end of 3 years, calculate the total amount she will receive from each bank.

b) Which bank should she choose? Explain your answer.

Question 10:

Reese invested some money in a savings account for 4 years. The rate of compound interest was fixed at 3.5% per annum compounded yearly. At the end of 4 years, there was $8887.57 in her account. How much did Reese invest in the account? Give your answer correct to the nearest dollar.

Question 11:

a) Jay is thinking of investing $5000 in Bank Y with an interest of 4% per annum, compounded half-yearly. How much will the interest be after 7 years?

b) Jay has another option. He can also deposit the same amount of money into Bank X which offers a simple interest of 5% per annum for 7 years. Which bank should Jay deposit his money in? Justify your answer.

Question 12:

Ean invested $10,800 in a bank that pays 2.8% compound interest per annum compounded every three months. Calculate the total amount he has in the bank after $3\frac{1}{2}$ years.

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Question 13:

John and Karen open separate bank accounts.

a) John deposits $800 in his account. This account pays simple interest at the rate of 5% per annum. Calculate the total amount in his account after 3 years.

b) Karen deposits $800 in her account. This account pays compound interest at the rate of 5% per year. Calculate how much more money there is in her account after 3 years than there is in John's account.

Question 14:

Fred buys a laptop. To pay for it, he borrows the whole cost of $1599 for 4 years at compound interest of 3% per year. Calculate the amount of interest Fred has to pay.

Question 15:

Andrea works in the sales department. Her monthly salary consists of a basic pay of $1200. On top of that, she will be given 5% bonus on all sales generated. In a particular month,
her salary is $10 500.

a) Calculate her sales for the month.

Andrea decides to save 20% of the month salary in Bartley Bank for 4 years.

Barley Bank offers 2 types of saving plans as shown below.

Plan *A* : A simple interest of 3% per annum.

Plan *B* : A compound interest of 2.4% per annum.

b) Calculate the amount she is saving for the month.

c) Which Plan should Andrea choose?