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Financial Mathematics - Compound Interest Tutorial Sheet

1. Find what \$2000 would amount to in 2 years at 6% per annum compound interest.
   What rate of simple interest would give the same amount in the same time?

2. Find the compound interest on \$560 for 3 years at 6% per annum, correct to the nearest penny. By how much does this exceed the simple interest on \$560 for the same period at the same rate?

3. The difference between the simple and compound interest on a certain sum of money for 2 years at 4% per annum is \$1.20. Find the sum of money.

4. What sum of money at compound interest will amount to \$325 at the end of the first year and to \$338 at the end of the second year? What will be the amount at the send of the third year?

5. Find the compound interest on \$100 for 2 years at 24% per annum.
   What sum of money invested at 24% per annum compound interest will amount to \$980.75 at the end of 2 years?

6. Show that \$1 amounts to $\$(1.02)^3$ at 2% per annum compound interest in three years.

7. Find in what time the simple interest on \$288 at 5% per annum would be equal to the simple interest on \$480 for 60 days at 44% per annum.

8. An investor invests \$150 at the beginning of each of three consecutive years at 44,% per annum, compound interest. How much will their investment be worth at the end of the third year?
   Assuming that simple interest only is allowed, what rate per cent would produce exactly the same amount?

9. A certain sum of money was invested at 34% per annum, compound interest. The interest due at the end of the first year was \$22.40.

   (i) Find the principal.

   (ii) Compute the amount at the end of the fourth year.

10. The sum of 77.5 cents invested in a Savings Certificate becomes \$1 after 5 years. Show that this is equivalent to more than 5% per annum compound interest. Is it equivalent to more than 5.25% per annum compound interest?

11. An investor receives \$19.56 as simple interest on \$489 at 2% per annum. How much more would they have received if compound interest at the same rate per annum had been paid?

12. An investor borrows \$1250 from a Bank at 5% per annum, compound interest. How much, correct to the nearest penny, will they owe the Bank at the end of three years? Prove also that they could clear all the debt by three annual payments of \$463.05, beginning in one years time.