M110 SECTION 11.2 SIMPLE INTEREST

An ad for a bank states that they pay "5% simple yearly interest" on your principal.

Interest is the money that you earn for allowing the bank to use your money. OR, interest is the money that you pay back to the bank (or other lender) when you borrow money.

SIMPLE INTEREST is interest that is paid on only the _____.

BASIC TERMS PRINCIPAL _____

INTEREST _____

INTEREST RATE _____

TIME _____

SIMPLE INTEREST I =
where P =
r =
t =

It is VERY important to note that time, *t*, is always expressed in the same period as the rate. If you are given the annual interest rate, then time must be in years. If you are given a monthly interest rate, the time should be in months as well.

Interest rates are most commonly expressed as percents. So, when performing mathematical computations with them we need to express them as decimals.

15% = _____ 6% = _____ ½% = _____ 7.5% = _____

EXAMPLES

Find interest owed on an investment of $1200 at 12% simple interest at the end of one year.

Calculate the simple interest owed on a two-month investment of $500 if the interest rate is 1.5% per month.

Calculate the simple interest owed on a 7 month investment of $7,000 if the annual interest rate is 5.25%.

Find the annual interest rate if a principal of $10,000 increased to $10,900 at the end of 1 year.

Suppose you borrow $8,000 at 8% simple interest. How much interest will you owe at the end of 9 months?

Now, take this loan one step further. How much will you have to pay back at the end of the time period?

If money (principal) is ***invested*** at *r*%, then at the end of *t* years, the investor will have the ***future value of the investment*** – which is the principal *plus* the interest.

AMOUNT (FUTURE VALUE): SIMPLE INTEREST SITUATION

A =

A =

A =

where P =
r =
t =
A =

EXAMPLES

You deposit $1,000 in a bank account paying 3% annual interest and leave the money there for 6 years. Compute the future value of this account.

Find the future value of a savings account after 18 months if $500 is deposited at 7.5% simple interest.

In contrast to ***future value,*** the principal that you need to invest in an account right now to have a specified amount in the account in the future is called the ***present value.***

If you want to earn an annual rate of 10% on your investment, how much (to the nearest cent) should you pay for a note that will be worth $5,000 in 9 months.

The future value of a three month investment of $4000 is $4085. What is the annual simple interest rate?