

SIMPLE INTEREST

Simple Interest: $I = PRT$

where $I =$ Interest earned

$P =$ Principal

$R =$ interest Rate

$T =$ Time (in years)

Note: 1 Year = 360 days

↳

EXAMPLE 1:

An investor deposits \$2,000 into a savings account. The account pays 7% interest annually. What is the principal after two years?

$$I = ?$$

$$P = 2,000$$

$$R = 0.07$$

$$T = 1 + 1 \text{ years}$$

First year

$$I = PRT$$

$$I = (2,000)(0.07)(1)$$

$$I =$$

Second year

$$I = PRT$$

$$I =$$

$$I =$$

↳ Interest earned after 2nd year!

↳

EXAMPLE 2:

A student takes out a loan for \$700 with an interest rate of 14%. How much does the student pay in interest if it must be paid in 90 days?

NOTE: Since T is always in _____
we must convert 90 days into _____
90 days $\left(\frac{\quad}{\quad} \right) = \underline{\quad}$

So: $I = PRT$
 $I =$
 $I =$

$P =$ _____
 $R =$ _____
 $T =$ _____

SIMPLE Interest Practice Problems

1. How much interest is gained after 1 year if \$10,000 is put into an account with an annual interest rate of 7% ?
2. A student takes out an emergency loan for \$600.00 to pay for school supplies. The interest rate is 6% annually. How much interest does the student have to pay after 6 months?
3. A student needs a 90 day loan for \$750.00. The annual interest rate is 18%. How much must the student pay the lender after 90 days?

COMPOUND Interest

COMPOUND Interest is interest which is calculated not only on the initial Principal, but also the accumulated interest earned during previous periods.

$$A = P \left(1 + \frac{r}{n} \right)^{nt}$$

Where: $A =$

$P =$

$r =$

$n =$

$t =$

NOTE: If interest is compounded

Quarterly, $n =$

Semi-annually, $n =$

bi-annually, $n =$

weekly, $n =$

daily, $n =$

The formula for compound interest is used to calculate the amount of money that is in the account after t years.

↳

Example 1:

If \$10,000 is invested into an account that pays 5% interest compounded quarterly, how much money is in the account after 7 years?

$$P =$$

$$r =$$

$$n =$$

$$t =$$

so $A =$

(be sure to round to the nearest cent)

↳

EXAMPLE 2:

\$1,000 is placed into a savings account for 10 years. Interest is compounded annually with an interest rate of 5%. How much is in the account after 10 years?

$$\left. \begin{array}{l} P = \\ r = \\ n = \\ t = \end{array} \right\} A =$$

what if the interest is compounded daily?

COMPOUND INTEREST PRACTICE PROBLEMS

1. If \$20,000 is invested into an account that pays 3% compounded monthly, how much is in the account after 10 years?

2. \$5,000 is placed in a savings account for 10 years. Interest is compounded quarterly with an interest rate of 4%. How much is in the account after 8 years?