

# SIMPLE INTEREST

*Interest: how much is paid for the use of money (as a percent, or an amount)*

People can always find a use for money, so it **costs to borrow money**.

This is the idea of Interest ... paying for the use of the money.

Different places charge different amounts at different times!

But they usually charge this way:

**%** As a percent (per year) of the amount borrowed **%**

It is called **Interest**

Example: Borrow \$1,000 from the Bank

Alex wants to borrow \$1,000. The local bank says "**10% Interest**". So, to borrow the \$1,000 for 1 year will cost:


$$\mathbf{\$1,000 \times 10\% = \$100}$$

In this case the "Interest" is \$100, and the "Interest Rate" is 10% (but people often say "10% Interest" without saying "Rate")

Of course, Alex will have to pay back the original \$1,000 after one year, so this is what happens:


TODAY

Alex Bank

\$1000 

NEXT YEAR

Alex Bank

\$1000 

\$100 

**Alex Borrows \$1,000, but has to pay back \$1,100**

That is how simple interest works ... pay the same amount of interest every year.

Example: Alex borrows \$1,000 for 5 Years, at 10% simple interest:

- Interest =  $\$1,000 \times 10\% \times 5 \text{ Years} = \$500$
- Plus the Principal of \$1,000 means Alex needs to pay \$1,500 after 5 Years

There is a formula for simple interest

$$I = Prt$$

where

- I = interest
- P = amount borrowed (called "Principal")
- r = interest rate
- t = time

Like this:

Example: Jan borrowed \$3,000 for 4 Years at 5% interest rate, how much interest is that?

$$I = Prt$$

$$I = \$3,000 \times 5\% \times 4 \text{ years}$$

$$I = \$3000 \times 0.05 \times 4$$

$$I = \$600$$

# Simple Interest

To remember the calculations for Simple Interest, remember  $I = Prt$

$I$  = Interest rate,  $P$  = Principal amount,  $r$  = rate in percentage,  $t$  = time in years.

Solve the Simple Interest Problems:

1. How much interest does a \$646 investment earn at 8% over seven years?
2. If you borrow \$252 at 7% for six years, how much will you pay back by the end of the term?
3. What will the final balance be for \$731 invested at 7% for three years?
4. \$742.50 is earned on funds invested at a rate of 10% over nine years. What was the amount of the original funds?
5. Your final balance on an investment of \$130 invested at 8% was \$182.00. For what period of time did you invest?

6. How much principal must be invested to earn \$111.78 in nine years at an interest rate of 3%?
  
  
  
  
  
  
  
  
  
  
7. What is the interest rate if a principal of \$572 earns \$228.80 in interest in four years?
  
  
  
  
  
  
  
  
  
  
8. If you put money into a savings account that earns \$196.98 over three years at a rate of 7%, how much money did you put into the account?
  
  
  
  
  
  
  
  
  
  
9. How much interest is earned on a principal of \$272 invested at an interest rate of 5% for five years?
  
  
  
  
  
  
  
  
  
  
10. How much interest is earned on a principal of \$724 invested at an interest rate of 7% for six years?