

**Simple Interest:** amount of money after interest rate has been applied to a principal investment/loan after some time.

$$I = Prt$$

***I*** = interest

***P*** = principal

***r*** = interest rate

***t*** = time (measured in years)

**Principal** is the original money invested or borrowed.

**Interest rate** is percent of the original money that is paid/earned over time.

**Compounding period:** the interval of time for which compound interest is earned or charged on an investment or loan.

**Term:** The time between the issue date and the due date of a loan or an investment

**Amount** refers to the value of the investment/loan at the end of the time period by adding the principal and the interest

$$A = P + I$$

**Words to Know**

<b>Bi-weekly</b>	Every two weeks
<b>Bi-monthly</b>	Every two months
<b>Quarterly</b>	Four times per year (once every 3 months)
<b>Semi-monthly</b>	Two times per month
<b>Semi-annual</b>	Two times per year (once every 6 months)

## 7.1 - Explore Simple Interest and Compound Interest

To convert a percentage into a decimal, you simply divide the percentage by 100.

### Example:

$$30\% = 0.30$$

$$5\% = 0.05$$

$$3.5\% = 0.035$$

$$1.75\% = 0.0175$$

### Remember,

#### 12 months in 1 year

If you're investing for months but the interest is applied per year, you must divide the given months by 12.

e.g.

invested for 9 months means

$$t = \frac{9}{12}$$

#### 365 days in 1 year

If you're investing for days but the interest is applied per year, you must divide the given days by 365.

e.g.

invested for 90 days means

$$t = \frac{90}{365}$$

### Example:

a) Calculate the simple interest earned on an investment of \$5000 earning 2.85% per year for 30 months.

#### Solution

$$P = 5000$$

$$r = 0.0285$$

$$t = \frac{30}{12}$$

\*because we have 30 months, but with interest compounded per year, we have 12 months in a year

So

$$I = Prt$$

$$I = (\$5000)(0.0285)\left(\frac{30}{12}\right)$$

$$I = \$356.25$$

b) Determine the final amount of the investment

#### Solution

We calculated  $I$  in part a) and  $P$  is given in the question already so:

$$P = 5000$$

$$I = 356.25$$

$$A = P + I$$

$$A = \$5000 + \$356.25$$

$$A = \$5356.25$$

Homework: pg 352 #1-6, \*10\*, \*13\*