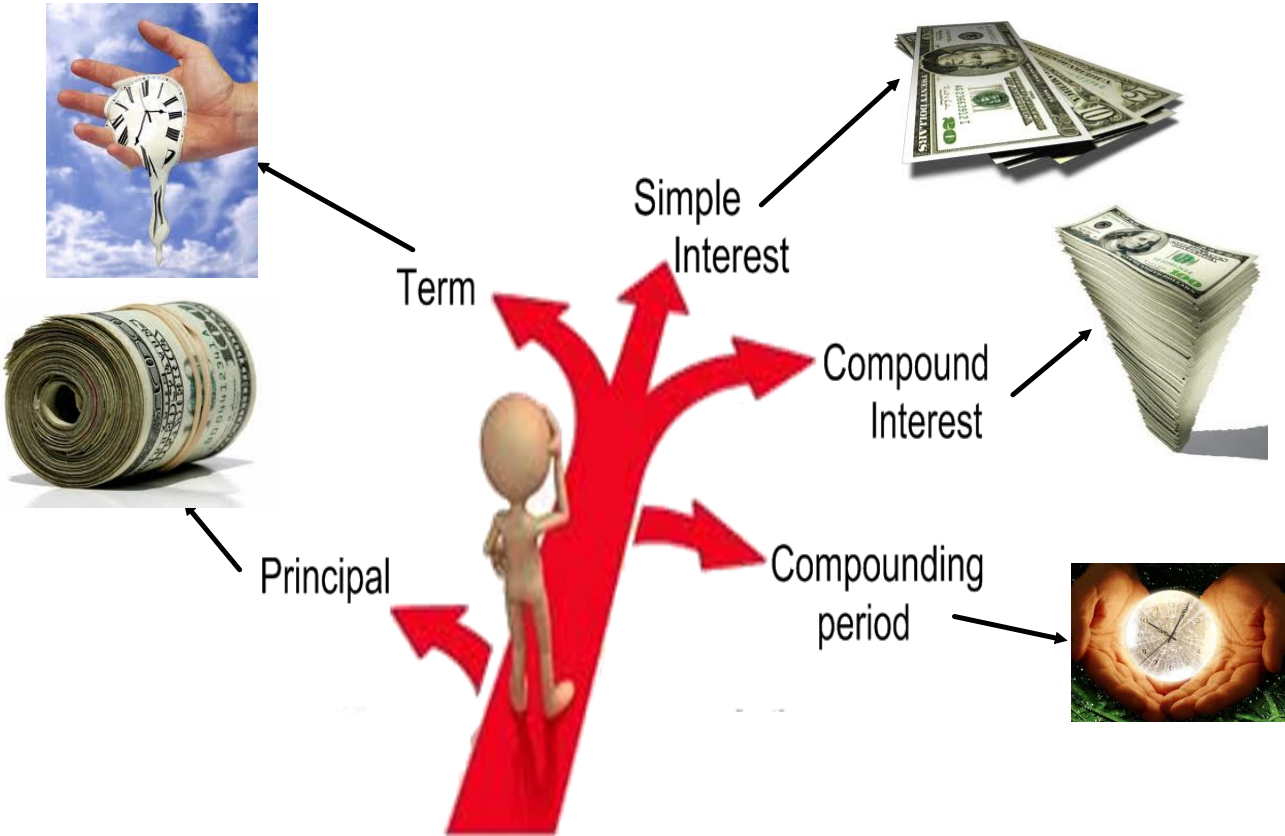# Simple and Compound Interest
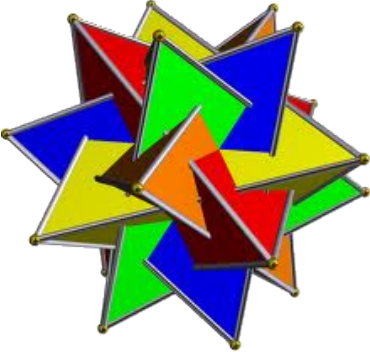
Term

Simple
Interest

Compound
Interest
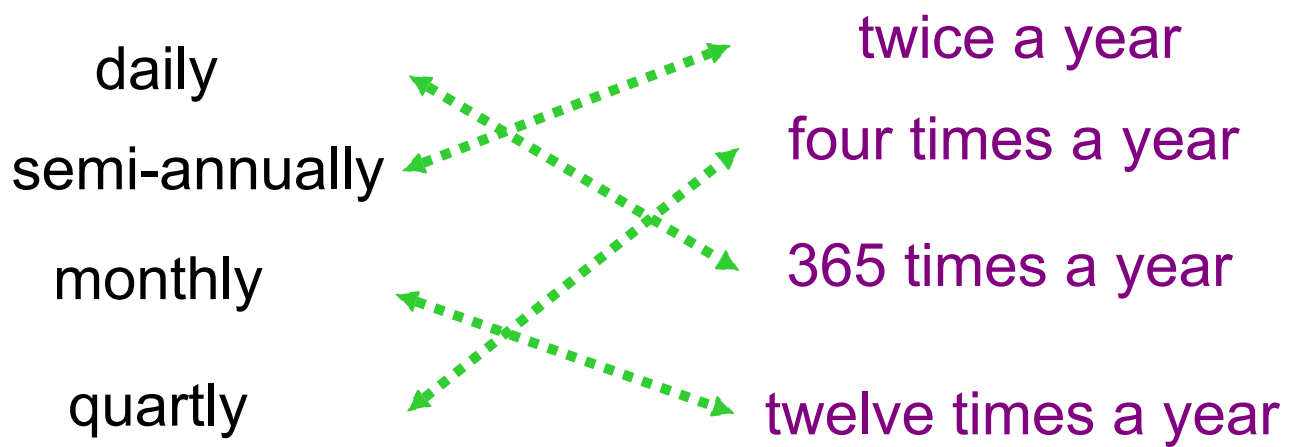
Principal

Compounding
period

SIMPLE

Interest

COMPOUND

Simple Interest - Interest calculated as a percentage of the principal.

Compound Interest - the interest paid on the principal plus interest

Terminology Tango

daily   twice a year

semi-annually   four times a year

monthly   365 times a year

quartly   twelve times a year

Click on the picture to verify the match.

SIMPLE Interest

Investment
($ Start with)

Interest Rate
as a decimal
(8% = 0.08)

Interest = Principal x rate x time

length or term

$$I = Prt$$

Gordon wants to invest $2000.00. His bank offers an investment option that earns simple interest at a rate of 1.75% per year.

$$I = Prt$$

$$I = (2000.^{00})(0.0175)(1)$$

$$I = \$35.^{00}$$

Given:

$$P = 2000.^{00}$$

$$r = 0.0175$$

$$t = 1$$

Gordon wants to invest $2000.00. His bank offers an investment option that earns simple interest at a rate of 1.75% per year for ~~1~~ 3 years.

$I = Prt$

$I = (2000)(0.0175)(3)$

$I = \$105.00$

Given:

$P = 2000.00$

$r = 0.0175$

$t = 3$

Betty-Ann's bank offers a simple interst rate of 4% per annum. How much interest would Betty-Ann earn on her investment of $4000 after 8 months.

$$I = Prt$$

$$I = (4000)(0.04)\left(\frac{8}{12}\right)$$

$$\left(\begin{array}{c} per\ annum \\ = \\ per\ year \end{array}\right)$$

$$I = (4000)(0.04)(0.67)$$

Given:

$$I = \$107.20$$

$$P = \$4000$$

$$r = 0.04$$

$$t = \frac{8}{12} = \frac{2}{3}$$

Use the simple interest formula to determine answer this question.

The interest earned on a deposit is $25 with an interest rate is 6% per annum. If the money was invested for 2 years, what is the principal?

Given;

$I = \$25$

$r = 0.06$

$t = 2$

$P = ?$

$$I = Prt$$

$$25 = P(0.06)(2)$$

$$\underline{25} = \underline{0.12\,P}$$
$$0.12 \qquad 0.12$$

$$\boxed{\$208.33 = P}$$

Homework

Finish # 1-7

Simple Interest $I = Prt$

1. Jeff wants to invest $5000.00. His bank offers an investment option that earns simple interest at a rate of 1.5% per year. How much would he make in interest? $I = (5000)(0.015)(1)$

   $I = \$75$

2. Ava's bank offers a simple interest rate of 5% per annum. How much interest would Ava earn on her investment of $7000.00 after 3 months? $I = (7000)(0.05)(0.25)$

   $I = \$87.50$

3. The interest earned on a deposit is $75.00 with an interest rate of %5 per annum. If the money was invested for 3 years, what is the principal? $\$75 = P(0.05)(3)$

   $75 = 0.15P$

   $\$500 = P$

4. Holly wants to invest $3800.00. Her bank offers an investment option that earns simple interest at a rate of 2.5% per year. How much would he make in interest? $I = (3800)(0.025)(1)$

   $I = \$95$

5. Will's bank offers a simple interest rate of 2.75% per annum. How much interest would Will earn on his investment of 10,000.00 after 9 months? $I = (10000)(0.0275)(0.75)$

   $I = \$206.25$

6. The interest earned on a deposit is $125.00 with an interest rate of 3.5% per annum. If the money was invested for 5 years, what is the principal? $125 = P(0.035)(5)$

   $125 = 0.175P$

   $\$714.29 = P$

7. The interest earned on a deposit is $ 250 with an interest rate of 5% per annum. If the money was invested for 5 years, what is the principal?

   $250 = P(0.08)(5)$

   $250 = 0.4P$

   $\$625 = P$