**Simple Interest – Future Value**

Simple interest is when the invested amount is constant for the entire time of the investment and produces the same interests at the end of each time period.

C(*t*) = Co + Co (*i*)(*t*)

C(*t*) represents the Capital at the end of t number of years
Co represents the initial invested capital
*i* represents the annual interest rate
*t* represents the number of years of the investment

**Easier Formula to understand:**

Y = initial investment + (time)(interest • initial investment)

**Example #1**

There is $200 invested. It increases with simple interest by 10% every year. What is the investment worth in 12 years?

 Y = initial investment + (time)(interest • initial investment)

Y = 200 + (12)(10% x 200)
Y = 200 + (12)(0.10 x 200)
Y = 200 + (12)(20)
Y = 200 + 240
Y = 440

**Example #2**

Fred invested $3575 at an annual interest rate of 17%. How much will Fred’s investment be worth in 22 months?

Y = initial investment + (time)(interest • initial investment)

ANSWER

Y = 3575 + ($\frac{22}{12}$)(17% • 3575)
Y = 3575 + ($\frac{22}{12}$)(0.17 • 3575)

Y = 3575 + ($\frac{22}{12}$)(607.75)
Y = 3575 + 1114.20
Y = 4689.20

**Example #3**

Tamara invested her savings of $2400. After 2 years, her investment was now valued at $2700. What was the simple interest rate on her investment?

ANSWER

Y = initial investment + (time)(interest • initial investment)

2700 = 2400 + (2)(x • 2400)
2700 = 2400 + (2)(2400x)
2700 = 2400 + 4800x
300 = 4800x
0.0625 = x

Interest rate is 6.25%

**Example #4**

Danny invested $1501 over a 19 months period. After that period, his invested was valued at $1944. What was the simple interest rate over this period of time?

ANSWER

Y = initial investment + (time)(interest • initial investment)

1944 = 1501 + ($\frac{19}{12}$)(x • 1501)
1944 = 1501 + ($\frac{19}{12}$)(1501x)
1944 = 1501 + $\frac{28519}{12}$x
443 = $\frac{28519}{12}$x
0.1864 = x

The interest rate was 18.64%