**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 + ()(17% • 3575)  
Y = 3575 + ()(0.17 • 3575)

Y = 3575 + ()(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 + ()(x • 1501)  
1944 = 1501 + ()(1501x)  
1944 = 1501 + x  
443 = x  
0.1864 = x

The interest rate was 18.64%