Simple Interest

Simple Interest = Principal X Rate X Time

We can see from the formula that Simple Interest applies only to the Principal Amount.

The Simple Interest for an amount of $3000 invested over a period of 6 months at a rate of 9% is

SI = P X R X T

SI = 3000 X (9/100) X (6/12)

SI = 3000 X 0.09 X 0.5 = $135

Compound Interest

Compound interest is the interest on savings calculated on both the initial principal and the accumulated interest from previous periods.

$$\text{Compound Interest} = P \times \{ 1 + (\frac{r}{n}) \}^{nt} - P$$

Where
P = Principal
r = rate (decimal)
n = number of times per year it is compounded
t = number of years

Find the compound interest if $3000 is invested for 3 years at a rate of 7% compounded quarterly.

$$CI = 3000 \times \{ 1 + \frac{0.07}{4} \}^{4 \times 3} - 3000 = 3694.31 - 3000 = \$694.31$$