# Compound Interest Formula

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

$A$ = Ending Balance

$P$ = Original amount invested (Principle)

$r$ = interest rate (growth rate)

$n$ = # of times investment interest is compounded.

$t$ = time in years

Example: Oliver opens a savings account and deposits $134.00. If the interest rate is 3%, how much money will Oliver have in 5 years...

a.) compounded yearly $n = 1$

$$A = 134\left(1 + \frac{.03}{1}\right)^{1(5)} = \$155.34$$

b.) compounded monthly $n = 12$

$$A = 134\left(1 + \frac{.03}{12}\right)^{12(5)} = \$155.66$$

c.) compounded quarterly $n = 4$

$$A = 134\left(1 + \frac{.03}{4}\right)^{4(5)} = \$155.60$$

d.) compounded daily $n = 365$

$$A = 134\left(1 + \frac{.03}{365}\right)^{365(5)} = \$155.68$$