Compound Interest Formula

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

A = final amount
P = initial principal balance
r = interest rate
n = number of times ~~interest~~ applied per time period
t = number of time periods elapsed

Ex 30 years

$$A = 6000\left(1 + \frac{.07}{1}\right)^{(1)(30)}$$

$$A = 6000(1.07)^{30}$$

$$A = 45,673.53$$

1 year

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

$$A = 6000\left(1 + \frac{.07}{1}\right)^{1(1)}$$

$$A = 6000(1.07)^{1}$$

$$A = 6,420$$

2 years

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

$$A = 6000\left(1 + \frac{.07}{1}\right)^{(1)2}$$

$$A = 6000(1.07)^{2}$$

$$A = 6,869.4$$