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Lecture 4

Lecture By
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Compound interest

$$F = p(1+i)^n$$

$$P = f / (1+i)^n$$

$$F = P\left(1 + \frac{i}{m}\right)^{nm} \quad \text{if interest } i \text{ compound } m \text{ times per period } n$$

Where

$m = 2$ if compound semiannually

$m = 4$ if compound quarterly

$m = 12$ if compound monthly

$m = 365$ if compound daily

example1:- if you deposit 4000\$ into an account paying 6% annual interest compound quarterly how much will be in the account after 5 years?

Solution:-

$$P= 4000\$ \quad i=0.06 \quad n= 5 \quad m=4$$

$$F=p \left(1+\frac{i}{m}\right)^{nm}$$

$$= 4000(1+0.06/4)^{(5)(4)}$$

F= 5387.42\$ in the account

example1:- if you deposit 1000\$ into an account paying 12% annual interest compound annually how much will be in the account after 4 years?

Solution:-

$$P=1000\$ \quad i=12\% \quad n=4 \text{ years}$$

$$F=p(1+i)^n$$

$$F=1000(1+0.12)^4$$

$$F=1573.5\$$$