

Sep 10, 2012

## Simple Interest

$$I = Prt$$

I = interest

P = Principal

Agree

r = rate (decimal form)

t = time

$$P = \$15,000$$

$$r = 6\%$$

$$t = 5 \text{ years}$$

simple  
interest  
loan

$$I = P \cdot r \cdot t$$

$$I = (15,000)(0.06)(5) = 4500$$

$$\text{Payment} = \frac{15,000 + 4500}{60} = \$325/\text{month}$$

## Compound Interest

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

A = accumulated amount money amt

P = Principal

r = rate

t = time

n = # of compounding period

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$n = 1$  annually yearly  
 $n = 2$  bi-annually  
 $n = 2$  quarterly  
 $n = 12$  monthly  
 $n = 360$  or  $365$  daily

② 20-25  
years

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

\$2000  
10%

$n = 4$

$t = 20$

30

40

50

$$A = 2000 \left(1 + \frac{0.10}{4}\right)^{4t}$$

$$A = 2000 (1.025)^{4t}$$

$$t = 20 \quad 2000 (1.025)^{80}$$

$$2000 * 1.025^{180} = \$14,419$$

$$t = 30 \quad 2000 (1.025)^{120}$$

$$2000 * 1.025^{120} = \$38,716$$

$$t = 40 \quad 2000 (1.025)^{160}$$

$$2000 * 1.025^{160} = 103,955$$

$$t = 50 \quad 2000 (1.025)^{210}$$

$$2000 * 1.025^{210} = 279,127$$