

10.  $A = 200000$   
 $r = 2\% = .02$   
 $n = 52$

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

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

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

$$A = 1$$

$$P = \frac{200000}{\left(1 + \frac{.02}{52}\right)^{(52 \times 1)}}$$

$$P = 196040.49$$

$$t = 10$$

$$P = \frac{200000}{\left(1 + \frac{.02}{52}\right)^{(52 \times 10)}}$$

$$= 163752.45$$

$$t = 20$$

$$P = 134074.32$$

$$t = 30$$

$$P = 109774.99$$

$$t = 40$$

$$P = 89879.62$$

$$t = 50$$

$$P = 73590.04$$

11.  $r = 8\% = .08$

a)  $n = 1$

$$r_{\text{eff}} = \left(1 + \frac{r}{n}\right)^n - 1$$

$$= \left(1 + \frac{.08}{1}\right)^1 - 1$$

$$= 1 + .08 - 1$$

$$r_{\text{eff}} = .08$$

b)  $n = 2$

$$r_{\text{eff}} = \left(1 + \frac{r}{n}\right)^n - 1$$

$$= \left(1 + \frac{.08}{2}\right)^2 - 1$$

$$r_{\text{eff}} = .0816$$

c)  $n = 4$

$$r_{\text{eff}} = \left(1 + \frac{.08}{4}\right)^4 - 1$$

$$= .0824$$

d)  $n = 12$

$$r_{\text{eff}} = \left(1 + \frac{.08}{12}\right)^{12} - 1$$

$$= .0830$$