

$$(4) A = P(1 + r_m)^{nt}$$

$$25000 = P(1 + \frac{r}{12})^{12(7)}$$

$$25000 = P(1.3225)$$

$$P = \frac{25000}{1.3225} = 18903.40$$

(5)

$$A = 8400$$

$$P = 2000$$

$$r = 3.9$$

$$n = 4$$

$$A = P(1 + r_m)^{nt}$$

$$\frac{8400}{2000} = (1 + \frac{3.9}{100})^{4(t)}$$

$$4.2 = 1.00975^{4t}$$

$$4.2 = 1.00975^4 \times 1.00975^{4t}$$

$$\frac{4.2}{1.03957} = \frac{1.03957}{1.03957} \times 1.00975^{4t}$$

$$4.2 = 1.00975^{4t}$$

$$\log 4.2 = 4t \log 1.00975$$

$$\log 4.2 = t \log 1.00975$$

$$t = \frac{\log 4.2}{\log 1.00975} = 147.90 \approx 148$$

$$148 \text{ quarters} = 37 \text{ years}$$

$$t = 37 \text{ years}$$

$$(6) A = P \left[\frac{(1 + \frac{r}{m})^{mt} - 1}{\frac{r}{m}} \right] = 1500 \left[\frac{(1 + \frac{7}{100})^{10} - 1}{\frac{7}{100}} \right] = 1500 [13.82] = 20740.70$$

⑦ $r = 0.05$
 $A = 5000$
 $t = 10 \text{ years}$
 $m = 12$

$$A = P \left[\frac{(1 + \frac{r}{m})^{10t} - 1}{\frac{r}{m}} \right]$$

$$5000 = P \left(\frac{(1 + \frac{0.05}{12})^{10 \times 12} - 1}{0.05/12} \right)$$

$$5000 = P \left[\frac{0.647}{0.004167} \right] \Rightarrow P = 32.20 \text{ dollars Pm}$$

⑧ $PV = P \left[\frac{1 - (1 + \frac{r}{m})^{-mt}}{\frac{r}{m}} \right]$
 $PV = 1200 \left[\frac{1 - (1 + \frac{r}{1200})^{-12 \times 30}}{\frac{r}{1200}} \right]$

$$PV = 1200 \left[\frac{0.8767}{\frac{r}{1200}} \right] = 180349.70$$

(9) $PV = 5000$
 $t = 10$
 $m = 12$
 $\delta = 9.95\%$

$$PV = P \left[\frac{1 - (1 + \frac{r}{m})^{-mt}}{\frac{r}{m}} \right]$$

$$5000 = P \left[\frac{1 - (1 + \frac{9.95}{1200})^{-12 \times 10}}{\frac{9.95}{1200}} \right]$$

$$5000 = P \left[\frac{0.0288}{0.008291} \right]$$

$$5000 = P (75.835)$$

$$P = 65.93 = 65.90 \text{ dollars P.M.}$$