

1. $P = 25000$ $r = 7\%$ $n = 9/12 = t = 3/4$

a) $I = Prt = 25000 \times 7/100 \times 3/4 = \underline{\underline{1312.5}}$

b) $I = Prt = 3850 \times 9/100 \times 8/12 = \underline{\underline{231}}$

2. $P = 25900$

$t = 11$

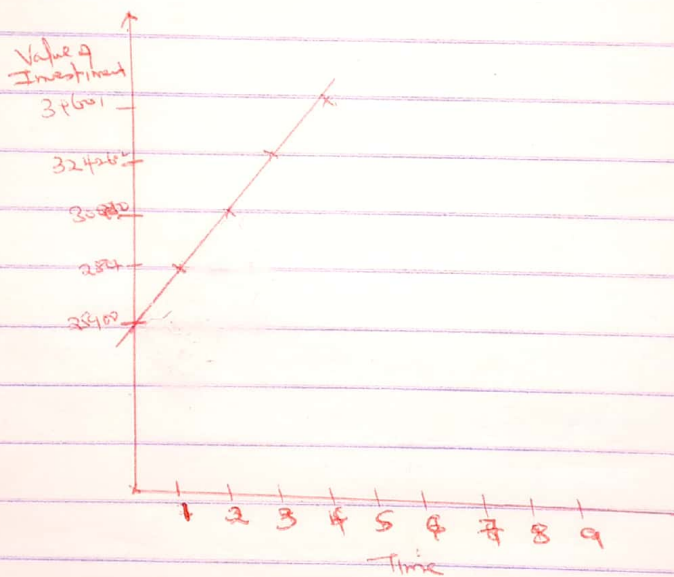
$r = 8.4\%$

a) $I = Prt = 25900 \times \frac{8.4}{100} \times 1 = \underline{\underline{2175.6}}$

(b)

Year	Interest	Amount
1	2175.6	$25900 + 2175.6 \times 1$
2	2175.6	$25900 + 2175.6 \times 2$
3	2175.6	$25900 + 2175.6 \times 3$

$\text{Amt} = P + I(n)$



(c) Interest for eleven years $= \text{Interest} \times n = 11 \times 2175.6 = \underline{\underline{23931.6}}$

③ $A - P = \text{Interest} = Prt$

$r = \frac{A - P}{Pt} = \frac{10000 - 5988.2}{6988.2 \times 10} = \frac{4011.98}{6988.2 \times 10} \times 100 = \underline{\underline{6.07\%}}$

④ $r = 6.42\%$ $t = 7/12$

$A = 5104 \times 7 = 35728$

$A = P + I = P + Prt = P(1 + rt)$

$P = \frac{A}{1 + rt} = \frac{35728}{1 + \frac{6.42}{100} \times \frac{7}{12}} = \underline{\underline{34438.29}}$

5. a) $A = P(1+i)^n$ $P = 1000$, $i = 6\%$ $n = 8$

$$A = 1000(1+0.06)^8 = \underline{\underline{1593.84}}$$

b) $A = P(1+i)^n$ $P = 1000$, $i = 7\%$ $n = 10$

$$A = 1000(1.07)^{10} = \underline{\underline{1967.15}}$$

c) $P = 470$, $i = 10/2 = 5\%$ $n = 12$

$$A = 470(1.05)^{12} = \underline{\underline{844.05}}$$

d) $P = 15000$ $i = 6/2 = 3\%$ $n = 11$

$$A = 15000(1.03)^{11} = \underline{\underline{20763.51}}$$

e) $P = 6500$ $r = 12/4 = 3\%$ $n = 6$

$$A = 6500(1.03)^6 = \underline{\underline{7761.34}}$$

6. $P = \frac{A}{(1+i)^n}$

a) $A = 15902.74$ $i = 9.8\%$ $n = 7$

$$P = \left[\frac{15902.74}{(1.098)^7} \right] = \underline{\underline{8265}}$$

b) $A = 27159.68$ $i = 12.3\%$ $n = 11$

$$P = \left[\frac{27159.68}{(1.123)^{11}} \right] = \underline{\underline{7581.36}}$$

c) $A = 2000$ $i = 9/2 = 4.5\%$ $n = 8$

$$P = \left(\frac{2000}{(1.045)^8} \right) = \underline{\underline{1406.37}}$$

d) $A = 8800$ $i = 10/4 = 2.5\%$ $n = 5$

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

$$= \left[\frac{8800}{(1.025)^5} \right] = \underline{\underline{7777.92}}$$

7. a) $t = \frac{72}{r} \Rightarrow r = \frac{3.6}{12} = 0.3\%$ per month

$$t = \frac{72}{0.3} = 240 \text{ months} = 12 \text{ years}$$

Still $t = \frac{\ln 2}{\ln(1+r)}$

$$= \frac{\ln 2}{\ln(1.003)} = \underline{\underline{231 \text{ months}}}$$

$$b) A = P(1+r)^n \\ = 3600(1.0023)^{80} = \underline{\underline{5157.21}}$$

$$c) A = 3600(1.0023)^{240} = \underline{\underline{7387.99}}$$

$$8) P = 4500$$

$$A = 6000$$

$$n = 3 \times 52\frac{1}{2} = 78$$

$$\frac{A}{P} = (1+r)^n = \frac{6000}{4500} = \frac{4}{3}$$

$$(1+r)^{78} = \frac{4}{3} \quad \text{let } 1+r = x$$

$$x^{78} = \frac{4}{3}$$

$$x = 1.0037$$

$$1+r = 1.0037 \Rightarrow r = 0.0037 \quad \text{per 2 months}$$

$$\text{Per annum} = 0.0037 \times 26 = 0.0962$$

$$= \underline{\underline{9.62\% \text{ p.a.}}}$$

$$9) P = A / (1+i)^n = 155000 / (1+0.0028)^{384} = \underline{\underline{52970.10}}$$

$$10) A = 2.9 \text{ million} \quad n = 12 \times 5 = 60 \quad i = 8/12 = 0.666\%$$

$$P = \frac{A}{(1+i/100)^n} = \frac{2.9 \times 10^6}{(1+0.00666)^{60}} = \underline{\underline{1946510.29}}$$

$$11) FV = PMT \left[\frac{(1+r)^n - 1}{r} \right]$$

$$= 3000 \left[\frac{(1+4\frac{1}{2}/100)^{10} - 1}{0.045} \right] = \underline{\underline{36864.63}}$$