

## Question 18

a) ~~#~~

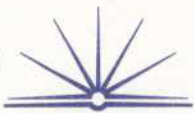
$$\begin{aligned}
 \text{i) } P &= P \left(1 + \frac{r}{100}\right)^n \\
 &= 72(1 + 0.06)^2 \\
 &= 80.90 \\
 &= 1000 + 72 + 80.90 \\
 &= \$1152.90 \text{ in the balance}
 \end{aligned}$$

$$\begin{aligned}
 \text{f) } P &= 1000 \left(1 + \frac{r}{100}\right)^n \\
 &= 1000(1 + 0.06)^2 \\
 &= \$1123.60
 \end{aligned}$$

$$\begin{aligned}
 \text{ii) } A_1 &= 72(1 + 1.06)^1 \\
 &=
 \end{aligned}$$

$$\begin{aligned}
 \text{ii) } A_1 &= 72(1.06)^1 - M \\
 A_2 &= A_1 \times (1.06)^2 - M
 \end{aligned}$$

P.T.O



b)

i)

expression for DP

$$t = 2000 + \frac{\tan \frac{GP}{250}}{15}$$

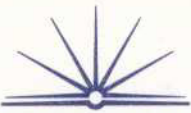
~~$$\frac{2000}{15} - \frac{\tan \theta}{15}$$~~

$$\frac{\tan \theta}{15} = \frac{2000}{15}$$

expression for FP

$$\frac{t}{\cos \frac{250}{FP}}$$

P.T.O.



b)

i) expression for DP

$$t = \frac{2000 + (\tan \theta \times 250)}{15} = \frac{400 + 50 \tan \theta}{3}$$

expression for FP

$$t = \frac{250}{4 \cos \theta}$$

$$t = \frac{250}{4 \cos \theta} = \frac{125}{2 \cos \theta}$$

ii)

$$\frac{400 + 50 \tan \theta}{3} - \frac{125}{2 \cos \theta}$$
$$= \frac{2 \cos \theta (400 + 50 \tan \theta) - 3(125)}{6 \cos \theta}$$
$$= \frac{800 \cos \theta + 100 \cos \theta \tan \theta - 375}{6 \cos \theta}$$

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