Question 10

a)

i) $P = P\left(1+\frac{r}{100}\right)^n$

$= 72\left(1+0.06\right)^2$

$= 80.90$

$= 1000 + 72 + 80.90$

$= \$1152.90$ in the balance

ii) $A_1 = 72(1+1.06)^1$

$=$

ii) $A_1 = 72(1.06)^1 - M$

$A_2 = A_1 \times (1.06)^2 + M$

i) $P = 1000\left(1+\frac{r}{100}\right)^n$

$= 1000\left(1+0.06\right)^2$

$= \$1123.60$

P.T.O

b)

i)

expression for DP

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

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

$$\tan\theta = \frac{2000}{15} - \frac{1}{15}$$

expression for FP

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

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b)

i) expression for DP

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

expression for FP

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

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

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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