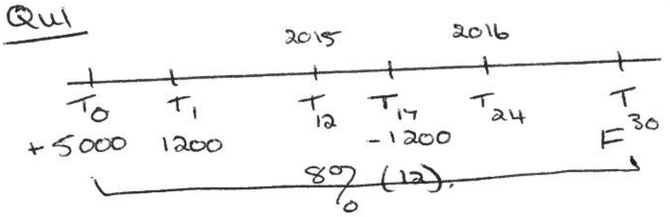
AP Prelim G12 P2

Qu1



$A = \frac{0,08}{12}$ ✓

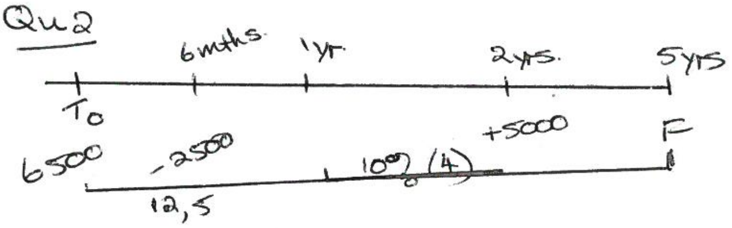
$F = 5000(1+A)^{30} + 1200\left\{\frac{(1+A)^{30}-1}{A}\right\} - 1200(1+A)^{13}$

$= 6102,96 + 39706,62 - 1308,26$ (B, C, D)

$= \underline{44501,32}$ ✓✓

12.

Qu2



$A = 0,125$ ✓ $B = \frac{0,10}{4}$ ✓

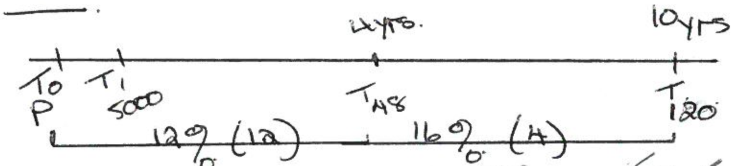
$F = 6500(1+A)^{1}(1+B)^{4\times4} - 2500(1+A)^{0,5}(1+B)^{4\times4} + 5000(1+B)^{3\times4}$

$= 10855,45 - 3936,40 + 6424,44$ (C, D)

$= \underline{13643,50}$ ✓

16.

Qu3



$A = \frac{0,12}{12}$ ✓

$\left(1+\frac{i}{12}\right)^{12} = \left(1+\frac{0,16}{4}\right)^{4}$ ✓

$\left(1+\frac{i}{12}\right)^{3} = 1,04$

$1+\frac{i}{12} = \sqrt[3]{1,04}$ ✓

$\frac{i}{12} = 0,013 = B$ ✓

$P(1+A)^{4\times12}(1+B)^{6\times12} = 5000\left\{\frac{(1+A)^{48}-1}{A}\right\}(1+B)^{72} + 5000\left\{\frac{(1+B)^{72}-1}{B}\right\}$

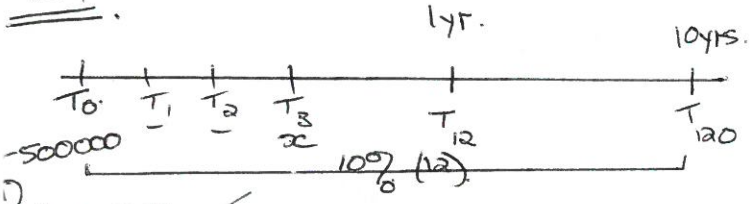
$P = 5000\left\{\frac{1-(1+A)^{-48}}{A}\right\} + 5000\left\{\frac{1-(1+B)^{-72}}{B}\right\}$

$= 39859,80 + 231724,26$ (C, D)

$= \underline{271584,07}$ ✓

(22)

Qu4.



1) $A = \frac{0,10}{12}$ ✓

$500\,000(1+A)^{120} = x\left\{\frac{(1+A)^{118}-1}{A}\right\}$ ✓

B

$1353520,75 = x\{199,497\ldots\}$ C

$x = 6484,64$ (10)

2) $Bal = 500\,000(1+A)^{12} - 6484,64\left\{\frac{(1+A)^{10}-1}{A}\right\}$

C D

$= 552356,53 - 70448,01$

$= 481908,53$ (10)

3) Total paid $= 118 \times 6484,64$

$= 800\,587,40$ ✓ (4)

4) After 1 year

Loan	481908,53
	100 000
	381908,53

$381908,53(1+A)^n = 6484,64\left\{\frac{(1+A)^n-1}{A}\right\}$

$381908,53 = 6484,64\left\{\frac{1-(1+A)^{-n}}{A}\right\}$ ✓

$56,2901A = 1-(1+A)^{-n}$ ✓

$+0,5309 = +(1+A)^{-n}$

$-n = \log_{(1+A)} 0,5309$ ✓

$n = 76,2944\ldots$ ✓

76 payments of 6484,64 + 1 final payment of less.

$381908,53(1+A)^{77} = 6484,64\left\{\frac{(1+A)^{76}-1}{A}\right\} \times (1+A) + F$

C

$F = 423563,96 - 421560,16$

$= 2003,80$ ✓ (22).

5) Total Cost =

$(76+10)\,6484,64 + 2003,80$

$= 585482,84$ ✓

Holiday Cost.

$800\,587,40 - 585482,84$

$= 215104,56$ ✓ (6)

4) OR.

$500000(1+A)^n = 100000(1+A)^{n-12} + 6484,64\left\{\frac{(1+A)^{n-2}-1}{A}\right\}$

$\frac{500000A}{6484,64}(1+A)^n = \frac{100000(A)}{6484,64}(1+A)^{n-12} + (1+A)^{n-2} - 1.$

$B(1+A)^n = C(1+A)^{n-12} + (1+A)^{n-2} - 1$

$1 = (1+A)^n\left(C(1+A)^{-12} + (1+A)^{-2} - B\right)$

$1 = (1+A)^n D. =$

~~$1 = (1+A)^n$~~

$\log_{(1+A)} D = \log_{1+A} 2,08044.$

$n = 88$

∴ no of payments of 6484,64 is 86.