Reading: Odomirok.18-IEE (IEE Net Inv Gain - 2017.Spring Q11) a-Question
Model: 2017.Spring #11
Problem Type: Net Investment Gain (NIG): value

Given

Financial Statement Item	notation	prior CY		current CY	
		home	all lines	home	all lines
PH surplus	S	----	18,000	----	19,000
net loss reserve	L	2,450	9,550	2,550	10,000
net LAE reserve	LAE	250	1,250	300	1,450
net UEP reserve	UEP	3,500	7,900	3,700	8,150
net EP	NEP	6,900	15,850	7,350	16,350
ceded reins. premium payable	re	900	1,050	950	1,150
agents' balances	AB	2,100	----	2,250	----

Net Investment Gain Ratio (NIGR) for current year: 3.5%

Find: Net Investment Gain (NIG) for HO *(Homeowers)*

Note: "NIGR" is pronounced like the country *Niger* .

Let m(x) = mean value of (prior CY value of x , current CY value of x)

Step 1: calculate SR *(Surplus Ratio)* for all lines

SR = m(S) / [m(L) + m(LAE) + m(UEP) + NEP_{CY}] <== use 'all lines' data

where:

m(S)	=	(	18,000	+	19,000	)	/	2	=	18,500
m(L)	=	(	9,550	+	10,000	)	/	2	=	9,775
m(LAE)	=	(	1,250	+	1,450	)	/	2	=	1,350
m(UEP)	=	(	7,900	+	8,150	)	/	2	=	8,025
NEP_{CY}	=	16,350								

then:

SR	=	18,500	/	35,500	=	52.1%

Step 2: calculate m(S_H) *(Surplus)* for home only

m(S_H) = SR x [m(L_H) + m(LAE_H) + m(UEP_H) + $NEP_{H(CY)}$] <== rearrange **Step 1** formula, use 'home' data

where:

m(L_H)	=	(	2,450	+	2,550	)	/	2	=	2,500
m(LAE_H)	=	(	250	+	300	)	/	2	=	275
m(UEP_H)	=	(	3,500	+	3,700	)	/	2	=	3,600
$NEP_{H(CY)}$	=	7,350								

then:

m(S_H)	=	52.1%	x	13,725	=	7,152

Step 3: calculate TIA *(Total Investable Assets)* for home only

TIA_H = m(L_H) + m(LAE_H) + m(UEP_H) + m(re_H) + m(S_H) - m(AB_H)

where:

m(reins. premiums $payable_H$)	=	925
m(AB_H)	=	2,175

then:

TIA_H	=	12,277

Step 4: calculate NIG *(Net Investment Gain)* for home only

NIG_H	=	NIGR	x	TIA_H
NIG_H	=	3.5%	x	12,277
NIG_H	=	430	<== final answer	