Reading: MSA.Ratios
Model: 2017.Spring #13
Problem Type: InvYld, ROE, ROA, Net U/W Leverage Ratio

Given

BALANCE SHEET

	current (1)	prior (0)
Cash	4,200	4,000
Bonds and Debentures	41,000	42,400
Common Shares	2,500	2,000
Real Estate	10,700	11,700
Agents and Brokers Receivables	400	700
Unearned Premiums Recoverable	9,500	10,400
Unpaid Claims and Adjustment Expenses Recoverable	?	?
Total Assets	88,100	100,700
Gross Unpaid Claims and Adjustment Expenses	36,200	37,200
Equity	27,100	27,100

INCOME STATEMENT

	current (1)	prior (0)
Net Premiums Written	41,000	39,900
Decrease in Net Unearned Premiums	-1,100	800
Net **Claims** and Adjustment Expenses	34,200	30,700
Total Acquisition Expenses	4,200	4,700
General Expenses	3,000	2,800
Investment Income	5,900	3,500
Realized Gains	-800	500
Investment Expenses	500	400
Income Taxes – Total	2,100	2,500

ALSO:

Net Leverage Ratio *(at end of current year)* :	310%	n/a

Calculate
(i) InvYld (Investment Yield)
(ii) ROE
(iii) ROA
(iv) Net U/W Leverage Ratio

Assesment Comment on the financial health of the company based on the quantities calculated above.

Calculate Calculate the unpaid claims and adjustment expenses recoverable at the end of the current year.

InvYld	=	2	x	NII	/	(	InvAss0	+	InvAss1	-	NII	)
	=	2	x	4,600	/	(	60,100	+	58,400	-	4,600	)
InvYld	=	8.08%	*<== final answer to (i) - use judgment to assess financial health*									

NII	=	InvInc	+	Realized Gains/Losses			-	InvExps
NII	=	5,900	+	-800	-	500		
	=	4,600						

InvAss	=	cash	+	bonds & debentures	+	commons shares	+	real estate
$InvAss_0$	=	4,000	+	42,400	+	2,000	+	11,700	=	60,100
$InvAss_1$	=	4,200	+	41,000	+	2,500	+	10,700	=	58,400

ROE	=	(	NI.preTax	-	Tot. Tax	)	/	equity		
	=	(	3,100	-	2,100	)	/	27,100		
ROE	=	3.69%	*<== final answer to (ii) - compare to acceptable minimum of 5.4 %*						BAD	

NI.pretax	=	NEP	-	net.CAE	-	TotAcq	-	GenExps	+	NII
	=	39,900	-	34,200	-	4,200	-	3,000	+	4,600
	=	3,100								

NEP	=	NWP	-	change(UEP)				
	=	NWP	-	[	current(UEP)	-	prior(UEP)	]
	=	41,000	-	[	1,100	]		
	=	39,900						

ROA	=	(	NI.preTax	-	Tot. Tax	)	/	(2-yr average of assets)			
	=	(	3,100	-	2,100	)	/	average (	88,100	,	100,700
	=	1.06%	*<== final answer to (iii) - compare to acceptable minimum of 2.6 %*						BAD		)

Net U/W Leverage Ratio	=	NWP	/	equtiy		
	=	41,000	/	27,100		
	=	151%	*<== final answer to (iv) - compare to acceptable MAXIMUM of 300 %*			
						GOOD

Calculation of UCAE: *We're given the value for Net Leverage Ratio, so let's write down the formula and see where it leads…*

Net Leverage Ratio	=	(	NWP	+	Net.Liabs	)	/	equity
310%	=	(	41,000	+	Net.Liabs	)	/	27,100
==> Net.Labs	=	43,010	*<== Net.Liabs was the only unknown so I decided to solve for it*					

Ok, but where do we go from here? You need to relate the unknown, UCAE recoverable, to quantities we have. To do this, it helps to recall that "Net" means "Net of reinsurance". Then we can relate "Net" and "Total" liabilities with this formula…

Net.Liabs	=	Tot.Liabs	-	UCAE recoverable	-	UEP recoverable
43,010	=	61,000	-	UCAE recoverable	-	9,500
UCAE recoverable	=	8,490	*<== final answer to UCAE recoverable*			

The term "Tot.Liabs" used in the above calculation was calculated as follows:

Tot.Liabs	=	Tot.Assets	-	equity	=	88,100	-	27,100	=	**61,000**

Reading: MSA.Ratios
Model: 2017.Spring #13
Problem Type: InvYld, ROE, ROA, Net U/W Leverage Ratio

Given

BALANCE SHEET

	current (1)	prior (0)
Cash	4,400	3,500
Bonds and Debentures	31,400	36,500
Common Shares	2,100	1,600
Real Estate	9,800	13,200
Agents and Brokers Receivables	400	600
Unearned Premiums Recoverable	8,100	10,700
Unpaid Claims and Adjustment Expenses Recoverable	?	?
Total Assets	96,100	85,500
Gross Unpaid Claims and Adjustment Expenses	35,600	32,500
Equity	25,400	23,200

INCOME STATEMENT

	current (1)	prior (0)
Net Premiums Written	38,000	39,000
Decrease in Net Unearned Premiums	1,000	900
Net **Claims** and Adjustment Expenses	28,100	30,100
Total Acquisition Expenses	4,600	3,900
General Expenses	2,400	2,700
Investment Income	5,100	3,200
Realized Gains	900	400
Investment Expenses	400	400
Income Taxes – Total	2,300	2,300

ALSO:

Net Leverage Ratio *(at end of current year)* :	400%	n/a

Calculate
(i) InvYld (Investment Yield)
(ii) ROE
(iii) ROA
(iv) Net U/W Leverage Ratio

Assesment Comment on the financial health of the company based on the quantities calculated above.

Calculate Calculate the unpaid claims and adjustment expenses recoverable at the end of the current year.

InvYld	=	2	x	NII	/	(	InvAss0	+	InvAss1	-	NII	)
	=	2	x	5,600	/	(	54,800	+	47,700	-	5,600	)
InvYld	=	11.56%	*<== final answer to (i) - use judgment to assess financial health*									

NII	=	InvInc	+	Realized Gains/Losses		-	InvExps
NII	=	5,100	+	900	-	400	
	=	5,600					

InvAss	=	cash	+	bonds & debentures	+	commons shares	+	real estate
$InvAss_0$	=	3,500	+	36,500	+	1,600	+	13,200	=	54,800
$InvAss_1$	=	4,400	+	31,400	+	2,100	+	9,800	=	47,700

ROE	=	(	NI.preTax	-	Tot. Tax	)	/	equity		
	=	(	9,500	-	2,300	)	/	25,400		
ROE	=	28.35%	*<== final answer to (ii) - compare to acceptable minimum of 5.4 %*					GOOD		

NI.pretax	=	NEP	-	net.CAE	-	TotAcq	-	GenExps	+	NII
	=	39,000	-	28,100	-	4,600	-	2,400	+	5,600
	=	9,500								

NEP	=	NWP	-	change(UEP)				
	=	NWP	-	[	current(UEP)	-	prior(UEP)	]
	=	38,000	-	[	-1,000	]		
	=	39,000						

ROA	=	(	NI.preTax	-	Tot. Tax	)	/	(2-yr average of assets)			
	=	(	9,500	-	2,300	)	/	average (	96,100	,	85,500
	=	7.93%	*<== final answer to (iii) - compare to acceptable minimum of 2.6 %*					GOOD			)

Net U/W Leverage Ratio	=	NWP	/	equtiy		
	=	38,000	/	25,400		
	=	150%	*<== final answer to (iv) - compare to acceptable MAXIMUM of 300 %*			GOOD

Calculation of UCAE: *We're given the value for Net Leverage Ratio, so let's write down the formula and see where it leads…*

Net Leverage Ratio	=	(	NWP	+	Net.Liabs	)	/	equity
400%	=	(	38,000	+	Net.Liabs	)	/	25,400
==> Net.Labs	=	63,600	*<== Net.Liabs was the only unknown so I decided to solve for it*					

Ok, but where do we go from here? You need to relate the unknown, UCAE recoverable, to quantities we have. To do this, it helps to recall that "Net" means "Net of reinsurance". Then we can relate "Net" and "Total" liabilities with this formula…

Net.Liabs	=	Tot.Liabs	-	UCAE recoverable	-	UEP recoverable
63,600	=	70,700	-	UCAE recoverable	-	8,100
UCAE recoverable	=	-1,000	*<== final answer to UCAE recoverable*			

The term "Tot.Liabs" used in the above calculation was calculated as follows:

Tot.Liabs	=	Tot.Assets	-	equity	=	96,100	-	25,400	=	**70,700**

Reading: MSA.Ratios (MSA ratios -3) a-Question
Model: 2017.Spring #13
Problem Type: InvYld, ROE, ROA, Net U/W Leverage Ratio

Given

BALANCE SHEET

	current (1)	prior (0)
Cash	6,300	4,700
Bonds and Debentures	57,500	56,900
Common Shares	3,800	2,600
Real Estate	16,600	19,200
Agents and Brokers Receivables	700	1,000
Unearned Premiums Recoverable	13,300	17,400
Unpaid Claims and Adjustment Expenses Recoverable	?	?
Total Assets	128,700	145,100
Gross Unpaid Claims and Adjustment Expenses	48,000	46,600
Equity	41,100	36,200

INCOME STATEMENT

	current (1)	prior (0)
Net Premiums Written	58,000	63,800
Decrease in Net Unearned Premiums	-1,600	1,400
Net **Claims** and Adjustment Expenses	49,400	42,600
Total Acquisition Expenses	6,500	6,500
General Expenses	4,300	3,900
Investment Income	8,500	5,600
Realized Gains	1,400	700
Investment Expenses	700	500
Income Taxes – Total	3,300	3,600

ALSO:

Net Leverage Ratio *(at end of current year)* :	210%	n/a

Calculate
(i) InvYld (Investment Yield)
(ii) ROE
(iii) ROA
(iv) Net U/W Leverage Ratio

Assesment Comment on the financial health of the company based on the quantities calculated above.

Calculate Calculate the unpaid claims and adjustment expenses recoverable at the end of the current year.

InvYld	=	2	x	NII	/	(	InvAss0	+	InvAss1	-	NII	)
	=	2	x	9,200	/	(	83,400	+	84,200	-	9,200	)
InvYld	=	11.62%	<== *final answer to (i) - use judgment to assess financial health*									

NII	=	InvInc	+	Realized Gains/Losses		-	InvExps
NII	=	8,500	+	1,400	-	700	
	=	9,200					

InvAss	=	cash	+	bonds & debentures	+	commons shares	+	real estate
$InvAss_0$	=	4,700	+	56,900	+	2,600	+	19,200	=	83,400
$InvAss_1$	=	6,300	+	57,500	+	3,800	+	16,600	=	84,200

ROE	=	(	NI.preTax	-	Tot. Tax	)	/	equity		
	=	(	5,400	-	3,300	)	/	41,100		
ROE	=	5.11%	<== *final answer to (ii) - compare to acceptable minimum of 5.4 %*						BAD	

NI.pretax	=	NEP	-	net.CAE	-	TotAcq	-	GenExps	+	NII
	=	56,400	-	49,400	-	6,500	-	4,300	+	9,200
	=	5,400								

NEP	=	NWP	-	change(UEP)				
	=	NWP	-	[	current(UEP)	-	prior(UEP)	]
	=	58,000	-	[	1,600	]		
	=	56,400						

ROA	=	(	NI.preTax	-	Tot. Tax	)	/	(2-yr average of assets)			
	=	(	5,400	-	3,300	)	/	average (	128,700	,	145,100
	=	1.53%	<== *final answer to (iii) - compare to acceptable minimum of 2.6 %*						BAD		

Net U/W Leverage Ratio	=	NWP	/	equtiy		
	=	58,000	/	41,100		
	=	141%	<== *final answer to (iv) - compare to acceptable MAXIMUM of 300 %*			
						GOOD

Calculation of UCAE: *We're given the value for Net Leverage Ratio, so let's write down the formula and see where it leads…*

Net Leverage Ratio	=	(	NWP	+	Net.Liabs	)	/	equity
210%	=	(	58,000	+	Net.Liabs	)	/	41,100
==> Net.Labs	=	28,310	<== *Net.Liabs was the only unknown so I decided to solve for it*					

Ok, but where do we go from here? You need to relate the unknown, UCAE recoverable, to quantities we have. To do this, it helps to recall that "Net" means "Net of reinsurance". Then we can relate "Net" and "Total" liabilities with this formula…

Net.Liabs	=	Tot.Liabs	-	UCAE recoverable	-	UEP recoverable
28,310	=	87,600	-	UCAE recoverable	-	13,300
UCAE recoverable	=	45,990	<== *final answer to UCAE recoverable*			

The term "Tot.Liabs" used in the above calculation was calculated as follows:

Tot.Liabs	=	Tot.Assets	-	equity	=	128,700	-	41,100	=	**87,600**

Reading: MSA.Ratios
Model: 2017.Spring #13
Problem Type: InvYld, ROE, ROA, Net U/W Leverage Ratio

Given

BALANCE SHEET

	current (1)	prior (0)
Cash	7,300	6,200
Bonds and Debentures	61,200	73,700
Common Shares	4,300	3,200
Real Estate	19,300	19,900
Agents and Brokers Receivables	700	1,300
Unearned Premiums Recoverable	15,000	17,200
Unpaid Claims and Adjustment Expenses Recoverable	?	?
Total Assets	176,900	142,000
Gross Unpaid Claims and Adjustment Expenses	64,900	64,600
Equity	43,100	46,300

INCOME STATEMENT

	current (1)	prior (0)
Net Premiums Written	68,000	74,100
Decrease in Net Unearned Premiums	2,000	1,500
Net **Claims** and Adjustment Expenses	49,200	45,500
Total Acquisition Expenses	7,800	7,200
General Expenses	5,000	4,700
Investment Income	8,700	5,600
Realized Gains	-1,600	900
Investment Expenses	900	600
Income Taxes – Total	3,500	4,200

ALSO:

Net Leverage Ratio *(at end of current year)* :	240%	n/a

Calculate
(i) InvYld (Investment Yield)
(ii) ROE
(iii) ROA
(iv) Net U/W Leverage Ratio

Assesment Comment on the financial health of the company based on the quantities calculated above.

Calculate Calculate the unpaid claims and adjustment expenses recoverable at the end of the current year.

InvYld	=	2	x	NII	/	(	InvAss0	+	InvAss1	-	NII	)
	=	2	x	6,200	/	(	103,000	+	92,100	-	6,200	)
InvYld	=	6.56%	<== *final answer to (i) - use judgment to assess financial health*									

NII	=	InvInc	+	Realized Gains/Losses		-	InvExps
NII	=	8,700	+	-1,600	-	900	
	=	6,200					

InvAss	=	cash	+	bonds & debentures	+	commons shares	+	real estate
$InvAss_0$	=	6,200	+	73,700	+	3,200	+	19,900	=	103,000
$InvAss_1$	=	7,300	+	61,200	+	4,300	+	19,300	=	92,100

ROE	=	(	NI.preTax	-	Tot. Tax	)	/	equity	
	=	(	14,200	-	3,500	)	/	43,100	
ROE	=	24.83%	<== *final answer to (ii) - compare to acceptable minimum of 5.4 %*					GOOD	

NI.pretax	=	NEP	-	net.CAE	-	TotAcq	-	GenExps	+	NII
	=	70,000	-	49,200	-	7,800	-	5,000	+	6,200
	=	14,200								

NEP	=	NWP	-	change(UEP)			
	=	NWP	-	[current(UEP)	-	prior(UEP)	]
	=	68,000	-	[-2,000	]		
	=	70,000					

ROA	=	(	NI.preTax	-	Tot. Tax	)	/	(2-yr average of assets)			
	=	(	14,200	-	3,500	)	/	average (	176,900	,	142,000
	=	6.71%	<== *final answer to (iii) - compare to acceptable minimum of 2.6 %*					GOOD			

Net U/W Leverage Ratio	=	NWP	/	equtiy
	=	68,000	/	43,100
	=	158%	<== *final answer to (iv) - compare to acceptable MAXIMUM of 300 %*	
				GOOD

Calculation of UCAE: *We're given the value for Net Leverage Ratio, so let's write down the formula and see where it leads…*

Net Leverage Ratio	=	(	NWP	+	Net.Liabs	)	/	equity
240%	=	(	68,000	+	Net.Liabs	)	/	43,100
==> Net.Labs	=	35,440	<== *Net.Liabs was the only unknown so I decided to solve for it*					

Ok, but where do we go from here? You need to relate the unknown, UCAE recoverable, to quantities we have. To do this, it helps to recall that "Net" means "Net of reinsurance". Then we can relate "Net" and "Total" liabilities with this formula…

Net.Liabs	=	Tot.Liabs	-	UCAE recoverable	-	UEP recoverable
35,440	=	133,800	-	UCAE recoverable	-	15,000
UCAE recoverable	=	83,360	<== *final answer to UCAE recoverable*			

The term "Tot.Liabs" used in the above calculation was calculated as follows:

Tot.Liabs	=	Tot.Assets	-	equity	=	176,900	-	43,100	=	**133,800**