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	7,200	6,700
Bonds and Debentures	65,500	75,800
Common Shares	4,000	3,100
Real Estate	18,200	22,500
Agents and Brokers Receivables	700	1,100
Unearned Premiums Recoverable	14,500	17,600
Unpaid Claims and Adjustment Expenses Recoverable	?	?
Total Assets	173,600	165,500
Gross Unpaid Claims and Adjustment Expenses	60,000	58,100
Equity	49,600	45,900

INCOME STATEMENT

	current (1)	prior (0)
Net Premiums Written	68,000	78,400
Decrease in Net Unearned Premiums	1,700	1,700
Net **Claims** and Adjustment Expenses	48,700	53,400
Total Acquisition Expenses	8,200	8,500
General Expenses	5,100	5,100
Investment Income	10,200	6,600
Realized Gains	1,600	800
Investment Expenses	800	700
Income Taxes – Total	3,700	4,100

ALSO:

Net Leverage Ratio *(at end of current year)* :	370%	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	8,900	/	(	98,600	+	82,100	-	8,900	)
InvYld	=	10.36%	*<== final answer to (i) - use judgment to assess financial health*									

NII	=	InvInc	+	Realized Gains/Losses	-	InvExps
NII	=	8,200	+	1,400	-	700
	=	8,900				

InvAss	=	cash	+	bonds & debentures	+	commons shares	+	real estate
$InvAss_0$	=	6,000	+	69,100	+	2,600	+	20,900	=	98,600
$InvAss_1$	=	7,500	+	55,200	+	3,700	+	15,700	=	82,100

ROE	=	(	NI.preTax	-	Tot. Tax	)	/	equity		
	=	(	16,100	-	3,300	)	/	38,900		
ROE	=	32.90%	*<== final answer to (ii) - compare to acceptable minimum of 5.4 %*						GOOD	

NI.pretax	=	NEP	-	net.CAE	-	TotAcq	-	GenExps	+	NII
	=	63,700	-	45,400	-	6,700	-	4,400	+	8,900
	=	16,100								

NEP	=	NWP	-	change(UEP)			
	=	NWP	-	[current(UEP)	-	prior(UEP)	]
	=	62,000	-	[-1,700	]		
	=	63,700					

ROA	=	(	NI.preTax	-	Tot. Tax	)	/	(2-yr average of assets)			
	=	(	16,100	-	3,300	)	/	average (	140,600	,	156,600
	=	8.61%	*<== final answer to (iii) - compare to acceptable minimum of 2.6 %*						GOOD		

Net U/W Leverage Ratio	=	NWP	/	equtiy
	=	62,000	/	38,900
	=	159%	*<== 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
200%	=	(	62,000	+	Net.Liabs	)	/	38,900
==> Net.Labs	=	15,800	*<== 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
15,800	=	101,700	-	UCAE recoverable	-	14,200
UCAE recoverable	=	71,700	*<== final answer to UCAE recoverable*			

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

Tot.Liabs	=	Tot.Assets	-	equity	=	140,600	-	38,900	=	**101,700**

Reading: MSA.Ratios (MSA ratios -2) a-Question
Model: 2017.Spring #13
Problem Type: InvYld, ROE, ROA, Net U/W Leverage Ratio

Given

BALANCE SHEET

	current (1)	prior (0)
Cash	8,400	6,100
Bonds and Debentures	67,000	73,200
Common Shares	4,300	3,200
Real Estate	18,900	21,600
Agents and Brokers Receivables	800	1,300
Unearned Premiums Recoverable	15,400	17,900
Unpaid Claims and Adjustment Expenses Recoverable	?	?
Total Assets	175,900	172,600
Gross Unpaid Claims and Adjustment Expenses	68,400	63,700
Equity	48,800	41,800

INCOME STATEMENT

	current (1)	prior (0)
Net Premiums Written	73,000	82,700
Decrease in Net Unearned Premiums	-2,200	1,800
Net **Claims** and Adjustment Expenses	57,500	47,800
Total Acquisition Expenses	8,000	8,000
General Expenses	5,000	5,400
Investment Income	10,000	7,000
Realized Gains	1,500	800
Investment Expenses	800	700
Income Taxes – Total	4,100	5,100

ALSO:

Net Leverage Ratio *(at end of current year)* :	380%	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	3,500	/	(	61,600	+	54,500	-	3,500	)
InvYld	=	6.22%	*<== final answer to (i) - use judgment to assess financial health*									

NII	=	InvInc	+	Realized Gains/Losses			-	InvExps
NII	=	4,900	+	-900	-	500		
	=	3,500						

InvAss	=	cash	+	bonds & debentures	+	commons shares	+	real estate
$InvAss_0$	=	4,000	+	42,500	+	1,900	+	13,200	=	61,600
$InvAss_1$	=	4,000	+	37,500	+	2,300	+	9,800	=	54,500

ROE	=	(	NI.preTax	-	Tot. Tax	)	/	equity	
	=	(	5,600	-	2,300	)	/	24,800	
ROE	=	13.31%	*<== final answer to (ii) - compare to acceptable minimum of 5.4 %*					GOOD	

NI.pretax	=	NEP	-	net.CAE	-	TotAcq	-	GenExps	+	NII
	=	39,000	-	29,600	-	4,500	-	2,800	+	3,500
	=	5,600								

NEP	=	NWP	-	change(UEP)			
	=	NWP	-	[	current(UEP)	-	prior(UEP)]
	=	40,000	-	[	1,000]		
	=	39,000					

ROA	=	(	NI.preTax	-	Tot. Tax	)	/	(2-yr average of assets)			
	=	(	5,600	-	2,300	)	/	average (	102,100	,	86,300
	=	3.50%	*<== final answer to (iii) - compare to acceptable minimum of 2.6 %*					GOOD			

Net U/W Leverage Ratio	=	NWP	/	equtiy	
	=	40,000	/	24,800	
	=	161%	*<== 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
280%	=	(	40,000	+	Net.Liabs	)	/	24,800
==> Net.Labs	=	29,440	*<== 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
29,440	=	77,300	-	UCAE recoverable	-	8,800
UCAE recoverable	=	39,060	*<== final answer to UCAE recoverable*			

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

Tot.Liabs	=	Tot.Assets	-	equity	=	102,100	-	24,800	=	**77,300**

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**