Problem   Calculate the net unpaid claims for all accident years using reported claims development.

cumulative gross reported claims:

(no reported claim development beyond 48 months)

AY	12	24	36	48
2013	5,800	8,968	12,092	12,900
2014	6,400	10,302	11,968	
2015	6,700	10,003		
2016	8,900			

cumulative ceded reported claims:

(under excess-of-loss treaty)

AY	12	24	36	48
2013	140	450	2,100	2,490
2014	0	670	670	
2015	160	160		
2016	0			

cumulative net paid claims:

(net of excess-of-loss treaty)

AY	pd clm
2013	10,300
2014	8,400
2015	5,500
2016	3,600

stop-loss limits

(applies AFTER excess-of-loss treaty)

AY	limit
2013	10,500
2014	11,000
2015	10,000
2016	11,000

There is no further loss development past 48 months

Step 1: Calculate the net reported claims triangle as (gross reported) - (ceded reported)

AY	12	24	36	48
2013	5,660	8,518	9,992	10,410
2014	6,400	9,632	11,298	
2015	6,540	9,843		
2016	8,900			

Step 2: Calculate net ultimate claims using reported development on the net triangle above (net of excess-of-loss)

AY	12-24	24-36	36-48	48-		
2013	1.5049	1.1730	1.0418		<===	MULTIPLICATIVE development
2014	1.5050	1.1730				
2015	1.5050					
2016						
selected	1.5050	1.1730	1.0418	1.0000	<===	tail = 1.0
cum	1.8391	1.2220	1.0418	1.0000	<===	selected x (previous cum)
Ult Clms	16,368	12,028	11,770	10,410	<===	cum x (latest diagonal from Step 1)
net of EoL						

Step 3: Put the results from Step 2 into a table and apply the given stop-loss limits

AY	Ult Clms net of EoL	stop-loss limit	Ult Clms net of ALL	net paid	net unpaid		
2013	10,410	10,500	10,410	10,300	110	<===	final answer
2014	11,770	11,000	11,000	8,400	2,600	<===	final answer
2015	12,028	10,000	10,000	5,500	4,500	<===	final answer
2016	16,368	11,000	11,000	3,600	7,400	<===	final answer
TOTAL					14,610		

Model: 2017.Fall #25
Problem Type: Apply reinsurance treaties and calculate net unpaid claims

Problem   Calculate the net unpaid claims for all accident years using reported claims development.

cumulative gross reported claims:
(no reported claim development beyond 48 months)

AY	12	24	36	48
2013	6,400	11,963	13,638	14,100
2014	3,800	7,193	9,644	
2015	7,600	15,047		
2016	2,600			

cumulative ceded reported claims:
(under excess-of-loss treaty)

AY	12	24	36	48
2013	170	170	170	380
2014	0	0	1,430	
2015	0	660		
2016	130			

cumulative net paid claims:
(net of excess-of-loss treaty)

AY	pd clm
2013	11,300
2014	6,800
2015	8,300
2016	1,000

stop-loss limits
(applies AFTER excess-of-loss treaty)

AY	limit
2013	8,500
2014	none
2015	10,000
2016	10,500

There is no further loss development past 48 months

Step 1: Calculate the net reported claims triangle as (gross reported) - (ceded reported)

AY	12	24	36	48
2013	6,230	11,793	13,468	13,720
2014	3,800	7,193	8,214	
2015	7,600	14,387		
2016	2,470			

Step 2: Calculate net ultimate claims using reported development on the net triangle above (net of excess-of-loss)

AY	12-24	24-36	36-48	48-		
2013	1.8929	1.1420	1.0187		<===	MULTIPLICATIVE development
2014	1.8929	1.1419				
2015	1.8930					
2016						
selected	1.8929	1.1420	1.0187	1.0000	<===	tail = 1.0
cum	2.2022	1.1634	1.0187	1.0000	<===	selected x (previous cum)
Ult Clms	5,439	16,738	8,368	13,720	<===	cum x (latest diagonal from Step 1)
net of EoL						

Step 3: Put the results from Step 2 into a table and apply the given stop-loss limits

AY	Ult Clms net of EoL	stop-loss limit	Ult Clms net of ALL	net paid	net unpaid		
2013	13,720	8,500	8,500	11,300	0	<===	final answer
2014	8,368	none	8,368	6,800	1,568	<===	final answer
2015	16,738	10,000	10,000	8,300	1,700	<===	final answer
2016	5,439	10,500	5,439	1,000	4,439	<===	final answer
TOTAL					7,707		