Reading: Klann.ReinsComm
Model: 2017.Fall #27b
Problem Type: restate triangles after commutation

Given

Primary Insurer

Ceded Paid Losses without Commutation			
policy year	**12**	**24**	**36**
PY-2	250	350	450
PY-1	250	350	
PY	250		

In the exam problem, PY = 2016

Primary Insurer

Net Reserves without Commutation			
policy year	**12**	**24**	**36**
PY-2	1,500	1,200	900
PY-1	1,500	1,200	
PY	1,500		

quota-share %	25%
commutation price:	250

Problem The insurer has decided to commute this contract for PY-2 within the latest calendar year.

i Restate the primary insurer's **net paid** loss triangle after commutation.
ii Restate the primary insurer's **net ultimate** loss triangle after commutation.

Hint 1: State the desired triangles **without** commutation, then make the appropriate adjustments.

Hint 2: Identify that cells in the triangle that are impacted by the commutation:
==> the only cell that is impacted is PY-2 & 36 months

Note: gross pd = ceded pd / qs%
net pd = gross pd x (1 - qs%)

==> net pd = ceded pd x (1 - qs%) / qs%

Primary Insurer

Net Paid Losses without Commutation			
policy year	**12**	**24**	**36**
PY-2	750	1,050	1,350
PY-1	750	1,050	
PY	750		

Step 1:
- use the above formula to create the net paid triangle without commutation *(on left)*

Step 2:
- adjust the appropriate entry from Step 1 *(see below)*

Primary Insurer *(this is the answer to part i)*

Net Paid Losses with Commutation			
policy year	**12**	**24**	**36**
PY-2	750	1,050	1,100
PY-1	750	1,050	
PY	750		

			commutation price
=	1,350	-	250

For part ii, proceed as follows:

Step 1:
- compute net **ultimate** loss triangle without commutation by summing net paid loss & net reserve *(on left)*

Step 2:
- adjust the appropriate entry from Step 1 *(see below)*

Primary Insurer

Net Ultimate Losses without Commutation			
policy year	**12**	**24**	**36**
PY-2	2,250	2,250	2,250
PY-1	2,250	2,250	
PY	2,250		

Primary Insurer

Net Ultimate Losses with Commutation			
policy year	**12**	**24**	**36**
PY-2	2,250	2,250	2,300
PY-1	2,250	2,250	
PY	2,250		

			paid loss with commutation		net resv without commutation		ceded resv without commutation
=	1,100	+	900	+	300		

Note: gross resv = net resv / (1 - qs%)
ceded resv = gross resv x qs%

==> ceded resv = net resv x qs% / (1 - qs%)