Reading: Odomirok.19-RBC (RBC (Cat)) Practice 01 a-Question
Model: Text Example
Problem Type: Calculate RBC charge R_{cat} (catastrophe risk)

Find Calculate the total RBC catastrophe risk charge.

Given

earthquake catastrophe risk charge	80,000

	modeled losses	
hurricane	D + A	net
1-in-50 year event	105,000	56,700
1-in-100 year event	120,000	64,800
1-in-250 year event	168,000	90,720
1-in-500 year event	243,000	131,220

** D + A is Direct + Assumed losses*
** Assume that all ceded amounts are subject to the credit risk charge of 0.048.*

Step 1 calculate net hurricane risk charge

hurricane	=	(net 1-in-100 year loss)	x	1.0	+	(ceded 1-in-100 year loss)	x	0.048
	=	64,800	x	1	+	55,200	x	0.048
	=	67,450						

Step 2 combine hurricane charge with earthquake charge for total catastrophe charge

R_{cat}	=	[(earthquake charge)^2	+	(hurricane charge)^2]$^{1/2}$
	=	[(80000) ^ 2	+	(67449.6) ^ 2] ^ 0.5
	=	104,640		

(final answer)

Reading: Odomirok.19-RBC
Model: Text Example
Problem Type: Calculate RBC charge R_{cat} (catastrophe risk)

Find Calculate the total RBC catastrophe risk charge.

Given

earthquake catastrophe risk charge	58,000

	modeled losses	
hurricane	D + A	net
1-in-50 year event	89,000	51,620
1-in-100 year event	104,000	60,320
1-in-250 year event	121,000	70,180
1-in-500 year event	164,000	95,120

** D + A is Direct + Assumed losses*
** Assume that all ceded amounts are subject to the credit risk charge of 0.048.*

Step 1 calculate net hurricane risk charge

hurricane	=	(net 1-in-100 year loss)	x	1.0	+	(ceded 1-in-100 year loss)	x	0.048
	=	60,320	x	1	+	43,680	x	0.048
	=	62,417						

Step 2 combine hurricane charge with earthquake charge for total catastrophe charge

R_{cat}	=	[(earthquake charge)^2	+	(hurricane charge)^2] $^{1/2}$
	=	[(58000) ^ 2	+	(62416.64) ^ 2] ^ 0.5
	=	85,205		
		(final answer)		