Reading: Werner 05: Premium
Model: Pricing Components
Problem Type: Premium Development

W-05 (030) Premium Devlpt (Problem 1)

Find Calculate the PY premium development factor year-end: 2026

Given WC carrier writes 1 annual policy per month in 2025 (assume first day of month)

Estimated premium at policy inception:	500
Months after policy expiration until first audit:	3
Historical upward premium development at audit	10%

Step 1 calculate number of policies with audit complete by year-end 2026

n	=	12	-	(months after policy expiration until first audit)
	=	12	-	3
	=	9		

Step 2a calculate PY written premium as of year-end 2026

Current PY WP	=	n	x	(est. premium)	x	(historical upward development)
	+	(12 - n)	x	(est. premium)		
	=	9	x	500	x	1.10
	+	3	x	500		
	=	6,450				

Step 2b calculate final PY written premium at year-end 2027 (all policy audits are now complete)

Final PY WP	=	12	x	(est. premium)	x	(historical upward development)
	=	12	x	500	x	1.10
	=	6,600				

Step 3 calcuate premium development factor

PDF	=	step 2b	/	step 2a
	=	6,600	/	6,450
	=	1.0233		

(final answer)

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Step 1 calculate number of policies with audit complete by year-end 2026

n	=	12	-	(months after policy expiration until first audit)
	=	12	-	3
	=	9		

Step 2a calculate PY written premium as of year-end 2026

Reading: Werner 05: Premium
Model: Pricing Components
Problem Type: Premium Development

W-05 (030) Premium Devlpt (Problem 2)

Find Calculate the PY premium development factor year-end: 2026

Given WC carrier writes 1 annual policy per month in 2025 (assume first day of month)

Estimated premium at policy inception:	750
Months after policy expiration until first audit:	9
Historical upward premium development at audit	15%

Step 1 calculate number of policies with audit complete by year-end **2026**

n	=	12	-	(months after policy expiration until first audit)
	=	12	-	9
	=	3		

Step 2a calculate PY written premium as of year-end **2026**

Current PY WP	=	n	x	(est. premium)	x	(historical upward development)
	+	(12 - n)	x	(est. premium)		
	=	3	x	750	x	1.15
	+	9	x	750		
	=	9,338				

Step 2b calculate final PY written premium at year-end **2027** (all policy audits are now complete)

Final PY WP	=	12	x	(est. premium)	x	(historical upward development)
	=	12	x	750	x	1.15
	=	10,350				

Step 3 calcuate premium development factor

PDF	=	step 2b	/	step 2a
	=	10,350	/	9,338
	=	1.1084		

(final answer)