5. (2 points)

Given the following:

Accident Year	Incurred Loss and ALAE as of December 31, 2017 ($000s)
2015	$15,000
2016	$8,000
2017	$2,000

Year Ending Quarter	Frequency	Severity ($)	Pure Premium ($)
March 31, 2014	0.055	18,200	1,001
June 30, 2014	0.054	18,000	972
September 30, 2014	0.056	18,100	1,014
December 31, 2014	0.058	18,300	1,061
March 31, 2015	0.058	18,500	1,073
June 30, 2015	0.059	19,000	1,121
September 30, 2015	0.062	19,200	1,190
December 31, 2015	0.063	19,500	1,229
March 31, 2016	0.065	19,750	1,284
June 30, 2016	0.066	19,885	1,312
September 30, 2016	0.066	20,000	1,320
December 31, 2016	0.068	20,250	1,377
March 31, 2017	0.069	20,445	1,411
June 30, 2017	0.070	20,882	1,462
September 30, 2017	0.069	21,000	1,449
December 31, 2017	0.065	21,250	1,381

Annual Exponential Trends			
# of Points	Frequency	Severity	Pure Premium
16	7%	5%	12%
12	6%	5%	11%
8	2%	4%	7%
6	0%	5%	5%
4	-7%	5%	-3%

- All policies are semi-annual.
- Rates are to be in effect for 2 years.
- There is no development after 36 months.
- An underwriting change went into effect on July 1, 2017, materially changing the composition of the book of business.
- A planned rate change will go into effect on January 1, 2019.

Calculate the projected 2015 accident year loss and ALAE to be used in the rate change analysis. Justify any trend selections.

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QUESTION 5	
TOTAL POINT VALUE: 2	**LEARNING OBJECTIVE(S): A3**

SAMPLE ANSWERS

Sample 1

The severity trend is stable, so I will select 5%. There is a major change that occurs on July 1, 2017, so a two-step trend for frequency is best. I will select a 6% trend up until July 1, 2017, and then I will choose the -7% trend from July 1, 2017 and onward.

Rates are in effect for 2 years on 1/1/2019., so 1/1/2019 – 1/1/2021.
Avg written = 1/1/2020
Avg earned = 4/1/2020

7/1/2015 – 7/1/2017 = 2.0 years
7/1/2017 – 4/1/2020 = 2.75 years

$15{,}000 \times (1.06 \times 1.05)^2 \times (0.93 \times 1.05)^{2.75} = \$17{,}405.25$

Sample 2

- Two-step trending for frequency, because of UW change
  - Step 1: 7/1/15 – 7/1/17, using long term trend, 16 points
  - Step 2: 7/1/17 – 4/1/20, using short term trend, 4 points
- One-step for severity, since trend is stable
  - 7/1/15 – 4/1/20
- $15{,}000\ (1.07)^2(.93)^{2.75}(1.05)^{4.75} = 17{,}735$
  freq sev

Sample 3

Due to change at 7/1/17, I will select a two-step pure premium trend.
1st proj from 7/1/15 to 7/1/17 2 yrs
2nd proj from 7/1/17 to 4/1/20 (avg loss date) 2.75 yrs

For the 1st trend, I will use the all points avg.
For the 2nd trend, due to the impact of underwriting change, I will select the 4 pt trend to better reflect this change.

Proj 2015 loss + ALAE = $15{,}000\ (1.12)^2\ (0.97)^{2.75} = 17{,}304$

EXAMINER'S REPORT

Candidates were expected to perform a two-step trend, choosing appropriate trends (either frequency and severity or pure premium) and calculating appropriate trend periods, in order to calculate projected losses.

Common mistakes include:

- Performing a one-step trend, instead of a two-step trend, which doesn't reflect the UW change

- Choosing inappropriate trends based on the data provided
- Failing to provide justification for trend selections
- Incorrect projection date for trending
- Calculating the trend periods incorrectly