

STAT 479
Quiz 5
Spring 2020
April 7, 2020

1. You are given that aggregate losses for various risks a portfolio have the following probability distributions:

	Number of Risks	Probability of a Loss	Loss Amount	Probability of Loss	Loss Amount	Probability of Loss
Risk 1	60	0.2	100	0.9	500	0.1
Risk 2	30	0.5	200	0.8	800	0.2
Risk 3	10	0.6	300	0.7	1000	0.3

- a. (1 point) Calculate the EPV for the claim frequency.
- b. (1 point) Calculate the VHM for the claim frequency.
- c. (3 points) A risk is chosen at random and observed for three years. During the three years, the insured has 2 claims. Use Buhlmann Credibility to estimate the expected claim frequency for this insured for the fourth year.

- d. (2 points) Calculate the EPV for the claim severity.
- e. (2 points) Calculate the VHM for the claim severity.
- f. (5 points) A risk is chosen at random and observed for four years. During the first three years, the insured has 2 claims for a total of 1000. Use Buhlmann Credibility to estimate the expected claim severity for this insured for the fourth year.

g. (2 points) Calculate the EPV for the pure premium.

h. (1 point) Calculate the VHM for the pure premium.

i. (3 points) A risk is chosen at random and observed for four years. During the first three years, the insured has 2 claims for a total of 1000. Use Buhlmann Credibility to estimate the expected pure premium for this insured for the fourth year.