Finance 4335 Risk Pooling Class Problem

by James R. Garven
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1. Suppose insurable losses are normally distributed, and your loss distribution has an expected value of $1,000 and a standard deviation of $1,000. Calculate the probability of personally incurring a loss which exceeds $1,500.

2. Consider an insurer which has sold 5 *independent* and *identically* distributed insurance policies, each having an expected loss of $1,000 and a standard deviation of $1,000. Calculate 1) the expected value and standard deviation of the insurer's average loss distribution, and 2) the probability that the loss on an average policy will exceed $1,500.

3. Suppose the insurer sells 10 such policies rather than only 5 policies. Perform the same calculations as in Problem 2 and explain the difference in your results.

4. Suppose the insurer sells 10 policies but now believes that the correlation between policies is .1 rather than zero. Compare your results with those obtained in Problem 3 and explain any differences.