COMP435 Practice 8/25/25   Name: _____

Question 1: Calculate Risk Exposure   Hospitals are vulnerable to ransomware attacks: the hospital's medical records are encrypted by the attacker and inaccessible to the hospital administration, staff, or doctors.

To recover their records, hospitals must pay the requested ransom, typically around $1,200,000.

There is a 1% probability of HealthyHospital being the subject of a $1.2M ransomware attack in any given year.

Calculate the hospital's annual risk exposure

Question 2: Calculating Costs   Suppose the HealthyHospital administrators are considering how best to protect against such attacks. One option is to maintain a duplicate database of records. Maintaining this independent set of records would cost $10,000 per year. In the event of a ransomware attack, the hospital would not have to pay the $1.2M ransom, but it would cost the hospital $20,000 to restore service from the back-up database.

Considering only costs, should the hospital take the option?