2001 Problem 2

The following problem is taken from an actual Advanced Placement Statistics Examination. Your task is to generate a complete, concise statistical response in 15 minutes. You will be graded based on the AP rubric and will earn a score of 0-4. After grading, keep this problem in your binder for your AP Exam preparation.

A department supervisor is considering purchasing one of two comparable photocopy machines, A or B. Machine A costs $10,000 and Machine B costs $10,500. This department replaces photocopy machines every three years. The repair contract for Machine A costs $50 per month and covers an unlimited number of repairs. The repair contract for Machine B costs $200 per repair. Based on past performance, the distribution of the number of repairs needed over any one-year period for Machine B is shown below.

Number of Repairs	0	1	2	3
Probability	0.50	0.25	0.15	0.10

Scoring:

You are asked to give a recommendation based on overall cost as to which machine, A or B, along with its repair contract, should be purchased. What would your recommendation be? Give statistical justification to support your recommendation.

E   P   I

E   P   I

E   P   I

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Total:___/4