



“FRAPPY” {Free Response AP Problem...Yay!}

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

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 a statistical justification to support your recommendation.

Total: __/4