

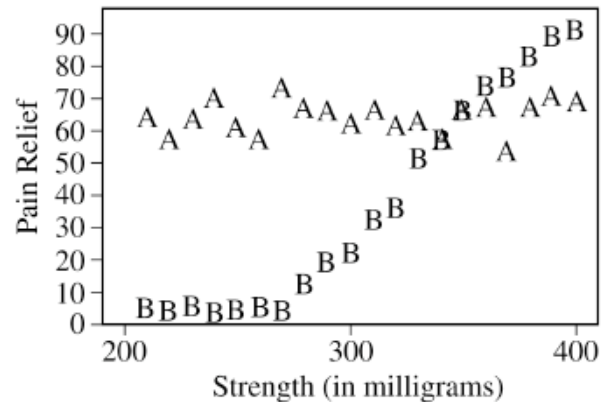


“FRAPPY” {Free Response AP Problem...Yay!}

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.

Two pain relievers, A and B, are being compared for relief of postsurgical pain. Twenty different strengths (doses in milligrams) of each drug were tested. Eight hundred postsurgical patients were randomly divided into 40 different groups. Twenty groups were given drug A. Each group was given a different strength. Similarly, the other twenty groups were given different strengths of drug B. Strengths used ranged from 210 to 400 milligrams. Thirty minutes after receiving the drug, each patient was asked to describe his or her pain relief on a scale of 0 (no decrease in pain) to 100 (pain totally gone).

The strength of the drug given in milligrams and the average pain rating for each group are shown in the scatterplot below. Drug A is indicated with A's and drug B with B's.



Scoring:

(a) Based on the scatterplot, describe the effect of drug A and how it is related to strength in milligrams.

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(b) Based on the scatterplot, describe the effect of drug B and how it is related to strength in milligrams.

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(c) Which drug would you give and at what strength, if the goal is to get pain relief of at least 50 at the lowest possible strength? Justify your answer based on the scatterplot.

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Total: __/4