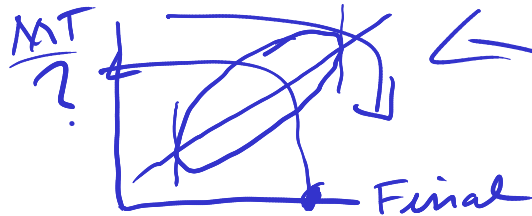


Math 4939 Feb. 10, 2021

Quing # 4



Consider the problem of imputing a grade for a missed mid-term mark from a student's performance on a final exam. Suppose a professor is considering three possibilities: 1) Use the student's z-score on the final exam to impute the z-score on the mid-term, 2) perform a linear regression of mid-term grades on the final exam grade and impute the mid-term grade by using the predicted mid-term grade, and 3) use a linear regression of the final exam grade on the mid-term grade and impute the mid-term grade that would have predicted the student's final exam grade.

Which of these three methods would be advantageous for a student who has a very high grade on the final exam? Which would be advantageous for a student who has a very low grade on the final exam? Clearly show the reasoning behind your answer.

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