

8. (3 points each) A study is published by a group of researchers at a prominent university that gives a person's expected annual salary after 10 years of work as a function,  $f$ , of the total amount of money that that person spent on college tuition. (The group counts loans, scholarships, family contributions, etc., as tuition that a person pays.) The tuition and salary are both measured in thousands of dollars.

(a) What does the statement  $f(5) = 20$  mean in practical terms?

(b) What does  $f^{-1}(50) = 20$  mean in practical terms?

(c) What do high-priced private schools hope is true about the sign of  $f'$ ? Explain.

(d) What does the statement  $f'(35) = 3$  mean in practical terms?

(e) Suppose you are trying to pick a college and your only concern is your expected salary after 10 years of work. If one of the schools you are considering will cost you 80,000 in tuition and  $f'(80) = -0.5$ , should you choose a more expensive, less expensive, or that particular school? Justify your answer.