

1. (18 points) The first and only edition of a certain calculus book came out in 1994. A partial publisher's record reflecting the price p , in dollars, of the book t years after it was first published is given below.

t	0	2	4	6	8
p	67	61	54	46	37

(Assume p and its derivative are differentiable functions.)

- (a) (5 pts.) Use the data to estimate $p'(6)$. Show your work; include units.
- (b) (4 pts.) Use your answers from part (a) to give a practical interpretation of $p'(6)$. You should only use everyday language that a non-calculus student would understand.
- (c) (3 pts.) You somehow find out that $p'(8) = -5.25$. What is the most reasonable estimate of the price of the book in 2003? Show brief work.
- (d) Just below the table given above the publisher has scribbled " $p''(t) > 0$."
- (i) (3 pts.) Based on the table's data, is it likely that the publisher's scribbled assertion is correct? *Please circle Yes or No below and briefly explain.*
- YES NO
- (ii) (3 pts.) Assuming the publisher is correct, what would the publisher's assertion tell a *non calculus expert* about the price of the book during the 8 years following its publication? *Please circle your choice.*
- (A) The function p was concave up during the 8 year period following the book's publication.
- (B) The function p decreased at an increasing rate during the 8 years that followed the book's publication.
- (C) The book was cheapest sometime around 1999.
- (D) The book's price dropped fast at first, then slower and slower toward the end of the 8 year-period.