

Math 162

Quiz 6

Form A

Show all work in a neat and organized fashion. Clearly indicate your answers.
10 points possible.

Use correct units!!

1. (4 pts.) The figure below shows per capita consumption of whole milk and lowfat milk in the United States from 1985 through 1992.

(a) Which graph do you think represents whole milk consumption and which represents lowfat milk consumption?

(b) Estimate the instantaneous rate of change in milk consumption for lowfat milk in 1987.

2. (4 pts.) The total number of states associated with the national PTA organization is given by the model

$$S(x) = \frac{49}{1 + 36e^{-0.21x}}$$

where $S(x)$ is the number of states, and x is the number of years since 1895. Calculate the percentage change in the number of states from 1910 to 1920.

3. (2 pts.) Let $W(t)$ be the number of words per minute (wpm) that a student in a typing class can type after t weeks in the course.

Select the sentence that best gives an interpretation of the following:

$$W'(40) = 45$$

- A. When the student was 40 weeks into the course, the student was typing 45 wpm.
- B. When the student was typing 40 wpm, the student was 45 weeks into the course.
- C. When the student's typing speed was 40 wpm, the number of weeks into the course was increasing at a rate of 45 weeks per wpm.
- D. During the first 45 weeks of the course, the student's typing speed increased at a rate of 40 wpm per week, on average.
- E. When the student was 40 weeks into the course, the student's typing speed was increasing at a rate of 45 wpm per week.
- F. When the student was 45 weeks into the course, the student's typing speed was increasing at a rate of 40 wpm per week.
- G. During the first 40 weeks of the course, the student's typing speed increased at a rate of 45 wpm per week, on average.