Math 105 - Section 2.2 Lecture Notes Problems

1. After *x* weeks, the number of people using a new rapid transit system was $N(x) = 6x^3 + 500x + 8000$.
   a. At what rate was the use of the system changing with respect to time after 8 weeks?
   b. By how much did the use of the system change during the eighth week?

2. A manufacturer of motor cycles estimates that is *x* thousand dollars is spent on advertising, then $M(x) = 2{,}300 + \frac{125}{x} - \frac{517}{x^2}$ cycles will be sold. Where $3 \le x \le 18$
   a. At what rate will sales be changing when $9,000 is spent on advertising?
   b. Are sales increasing or decreasing for this level of advertising expenditure?

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