MCS 121
Interpreting Derivatives

1. A company's revenue from car sales, C (measured in thousands of dollars), is a function of advertising expenditure, a, also measured in thousands of dollars. Suppose $C = f(a)$.

   (a) What does the company hope is true about the sign of f'?

   (b) What are the units of $f'(a)$?

   (c) What does $f'(100) = 2$ mean in practical terms? How about $f'(100) = .5$?

   (d) Suppose the company plans to spend \$100,000 on advertising. If $f'(100) = 2$, should they spend slightly more or slightly less than \$100,000 on advertising? What if $f'(100) = .5$?

   (e) Assume $f(100) = 500$ and $f'(100) = 2$. Estimate $f(102)$.