ECON 2500
Fall 2009
Dr. Tufte

Homework 18

Due: Friday, October 30, at the start of class.

1) Suppose your utility is given by: $U = Q_{Milk}^{0.3} Q_{Cookies}^{0.7}$ (where Q_{Milk} is measured in ounces, and $Q_{Cookies}$ is measured in cookies).
   a) What is the marginal utility of milk?

   b) What is the marginal utility of cookies?

   c) In the real world, if I give you a cookie, does this increase or decrease your desire for milk? Does that make them substitutes or complements?

   d) The way that we quantify part (c) mathematically is to model "desire for milk" as its marginal utility, and the effect of the cookie as the partial derivative of that marginal utility with respect to the quantity of cookies. What is this partial derivative? Does it suggest that milk and cookies are substitutes or complements? What should we do with out utility function if it doesn't say they are complements?