

- 1.** Let p be the price (in dollars) of 1 lb. of delicious cheese. Let $Q(p)$ be the number of pounds of delicious cheese that I'll buy if the price is $\$p$.
 - (a) In words, what does the equation $Q(2) = 10$ mean?
 - (b) Do you expect $Q'(2)$ to be positive or negative? Why?
 - (c) If $Q(2) = 10$ and $Q'(2) = -3$, roughly how much delicious cheese would I buy if the price p went up to $\$2.10$?
 - (d) In words, what is $Q'(2)$ telling you?

- 2.** Let $f(x) = \frac{1}{x}$ and $g(x) = \frac{1}{x} + 10$.
 - (a) Use your calculator to estimate $f'(3)$.
 - (b) Compute $f'(3)$ using the definition of derivative.
 - (c) Use your calculator to estimate $g'(3)$.
 - (d) Compute $g'(3)$ using the definition of derivative.
 - (e) Compare your results for f and g . Explain what happened. (A picture may be helpful.) Can you generalize?

- 3.** I went biking with my fellow Texan Lance Armstrong the other day. We covered the first half of the distance at 30 mph. Then Lance got tired, so we covered the second half of the distance at 20 mph. What was our average velocity? (HINT: It wasn't 25 mph.)