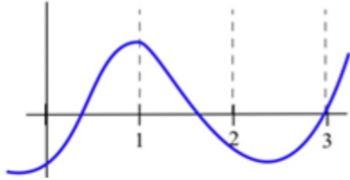


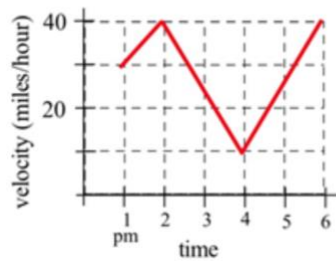
70. Fill in the table with "+", "-", or "0" for the function in the graph below.

x	$f(x)$	$f'(x)$	$f''(x)$
0			
1			
2			
3			

$y = f(x)$:



48. Write the total distance traveled by the car shown in the graph between 1 pm and 4 pm as a definite integral and estimate the value of the integral.



98. $f(x) = 2$, $g(x) = \sqrt{4 - x^2}$ and $-2 \leq x \leq 2$.

116. Find the future value of a continuous income stream $F(t) = 8500 + \sqrt{640t + 100}$, where t is in years and F is in dollars per year, for 15 years, if money can earn 6% annual interest, compounded continuously.

44. Here is a table showing values for the function $H(t, h)$.

t ↓	h →	100	150	200
0		100	150	200
1		110.1	160.1	210.1
2		110.4	160.4	210.4
3		100.9	150.9	200.9
4		81.6	131.6	181.6
5		52.5	102.5	152.5

a. Estimate the value of $\frac{\partial H}{\partial t}$ at (3, 150).

b. Estimate the value of $\frac{\partial H}{\partial h}$ at (3, 150).

c. Use your answers to parts a and b to estimate the value of $H(2.6, 156)$.

d. The values in the table came from $H(t, h) = h + 15t - 4.9t^2$, which gives the height in meters above the ground after t seconds of an object that is thrown upward from an initial height of h meters with an initial velocity of 15 meters per second. How close are your estimates from parts a, b, and c?

58. Suppose the demand functions for two products are $q_1 = f(p_1, p_2)$ and $q_2 = g(p_1, p_2)$, where p_1, p_2, q_1 , and q_2 are the prices (in dollars) and quantities for products 1 and 2. Consider the four partial derivatives $\frac{\partial q_1}{\partial p_1}$, $\frac{\partial q_1}{\partial p_2}$, $\frac{\partial q_2}{\partial p_1}$, and $\frac{\partial q_2}{\partial p_2}$. Tell the sign of each of these partial derivatives if

- the products are complementary goods.
- the products are substitute goods.