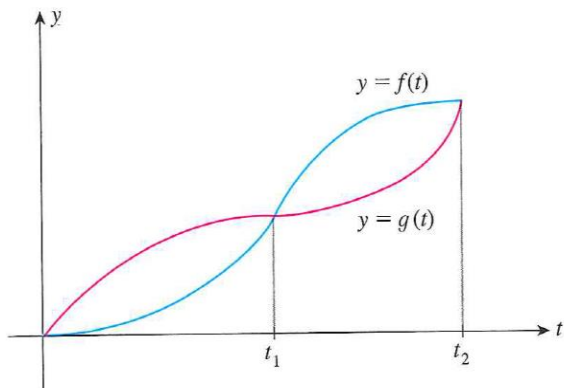16. MOTION OF CARS Two cars start out side by side and travel along a straight road. The velocity of Car A is $f(t)$ ft/sec, and the velocity of Car B is $g(t)$ ft/sec over the interval $[0, t_2]$. Furthermore, suppose the graphs of f and g are as depicted in the accompanying figure.

a. What can you say about the acceleration of Car A on the interval $(0, t_1)$? The acceleration of Car B on the interval $(0, t_1)$?
b. What can you say about the acceleration of Car A on the interval (t_1, t_2)? The acceleration of Car B over (t_1, t_2)?
c. What can you say about the acceleration of Car A at t_1? The acceleration of Car B at t_1?
d. At what time do both cars have the same velocity?

In Exercises 17–20, match the graphs (a), (b), (c), or (d) with the corresponding statement.

(a)

(b)

(c)

(d)
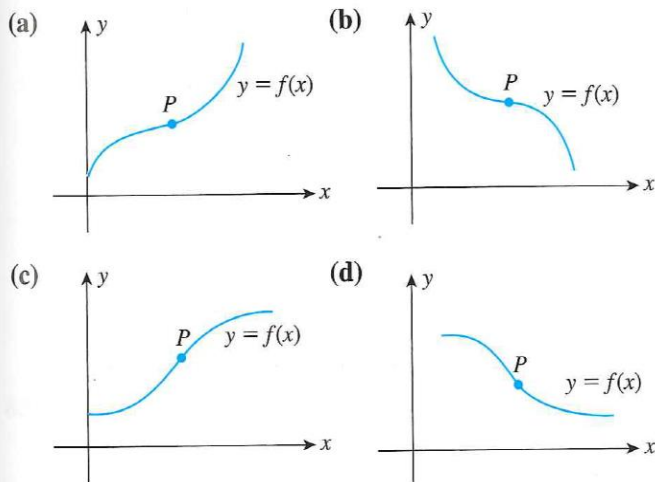
17. The function f is increasing most rapidly at P.

18. The function f is increasing least rapidly at P.

19. The function f is decreasing most rapidly at P.

20. The function f is decreasing least rapidly at P.

21. ASSEMBLY TIME OF A WORKER In the following graph, $N(t)$ gives the number of smartphones assembled by the average worker by the tth hr, where $t = 0$ corresponds to 8 A.M. and $0 \leq t \leq 4$. The point P is an inflection point.

a. What can you say about the rate of change of the rate of change of the number of smartphones assembled by the average worker between 8 A.M. and 10 A.M.? Between 10 A.M. and 12 noon?
b. At what time is the rate at which the smartphones are being assembled by the average worker greatest?
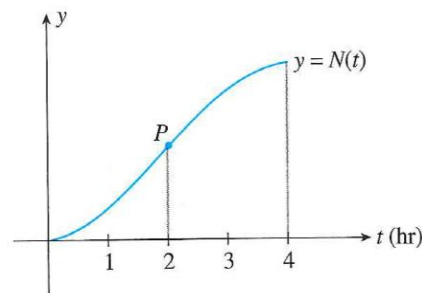
22. RUMORS OF A RUN ON A BANK The graph of the function f shows the total deposits with a bank t days after rumors abounded that there was a run on the bank due to heavy loan losses incurred by the bank.
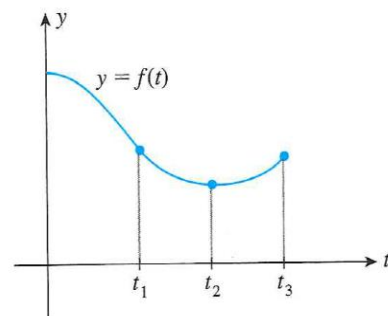
a. Determine the signs of $f'(t)$ on the intervals $(0, t_2)$ and (t_2, t_3), and determine the signs of $f''(t)$ on the intervals $(0, t_1)$ and (t_1, t_3).
b. Find where the inflection point(s) of f occur.
c. Interpret the results of parts (a) and (b).

23. WATER POLLUTION When organic waste is dumped into a pond, the oxidation process that takes place reduces the pond's oxygen content. However, given time, nature will restore the oxygen content to its natural level. In the following graph, $P(t)$ gives the oxygen content (as a percent of its normal level) t days after organic waste has been dumped into the pond. Explain the significance of the inflection point Q.