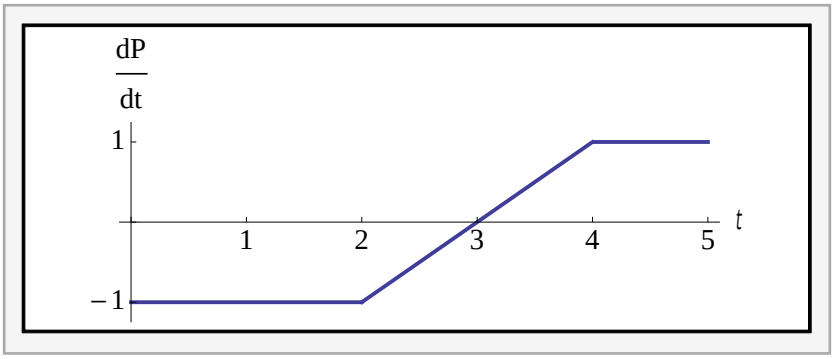
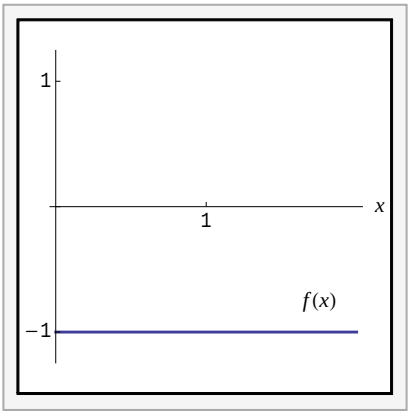
6.1 Antiderivatives Graphically and Numerically

Name: Date:

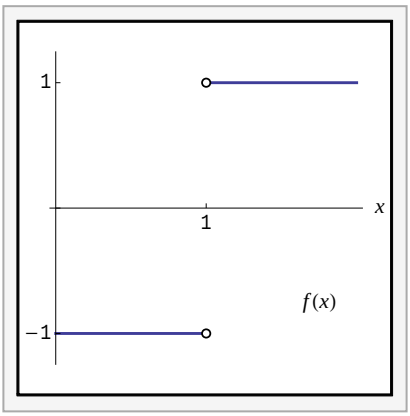
P 3. Use the figure below and the fact that $P = 2$ when $t = 0$ to find values of P when $t = 1, 2, 3, 4$ and 5.



P 5. Sketch two function F such that $F' = f$. In one case let $F(0) = 0$ and in the other, let $F(0) = 1$.



P 8. Sketch two function F such that $F' = f$. In one case let $F(0) = 0$ and in the other, let $F(0) = 1$.



P 13. Estimate $f(x)$ for $x = 2, 4, 6$, using the given values of $f'(x)$ and the fact that $f(0) = 100$.

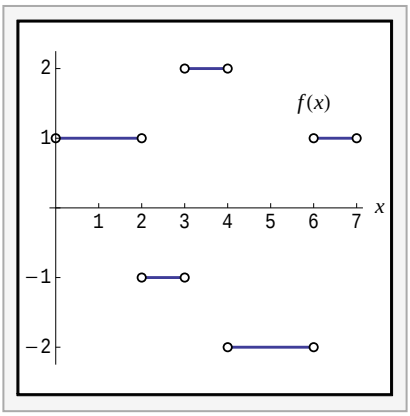
x	0	2	4	6
$f'(x)$	10	18	23	25

P 16. Assume f' is given by the graph below. Suppose f is continuous and that $f(0) = 0$.

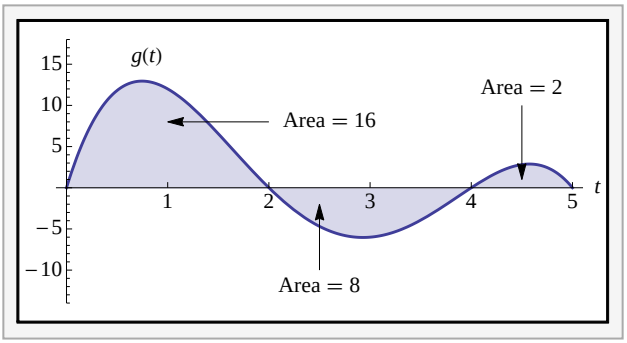
(a) Find $f(3)$ and $f(7)$.

(b) Find all x with $f(x) = 0$.

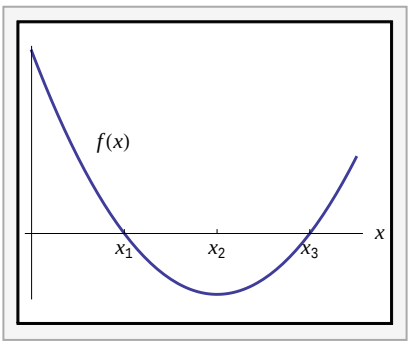
(c) Sketch a graph of f over the interval $0 \leq x \leq 7$.



P 19. Using the figure below, sketch a graph of an antiderivative $G(t)$ of $g(t)$ satisfying $G(0) = 5$. Label each critical point of $G(t)$ with its coordinates.



P 23. Sketch two function F with $F'(x) = f(x)$. In one, let $F(0) = 0$; in the other let $F(0) = 1$. Mark x_1, x_2, and x_3 on the x-axis of your graph. Identify local maxima, minima, and inflection points of $F(x)$.



P 29. The graph below records the spillage rate at a toxic waste treatment plant over the 50 minutes it took to plug the leak.

(a) Complete the table for the total quantity spilled in liters in time t minutes since the spill started.

Time t(min)	0	10	20	30	40	50
Qantity (liters)	0					

(b) Graph the total quantity leaked against time for the entire fifty minutes. Label axes and include units.