

Classroom Voting Questions: Calculus II

Section 6.1 Antiderivatives Graphically and Numerically

1. Which of the graphs (a-d) could represent an antiderivative of the function shown in Figure 6.1.

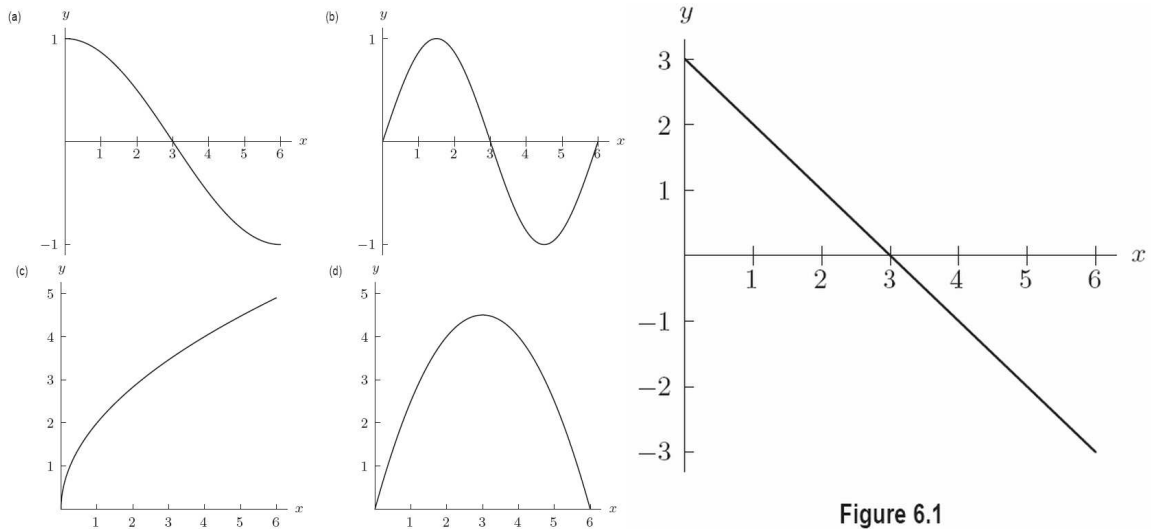


Figure 6.1

2. Which of the graphs (a-d) could represent an antiderivative of the function shown in Figure 6.2.

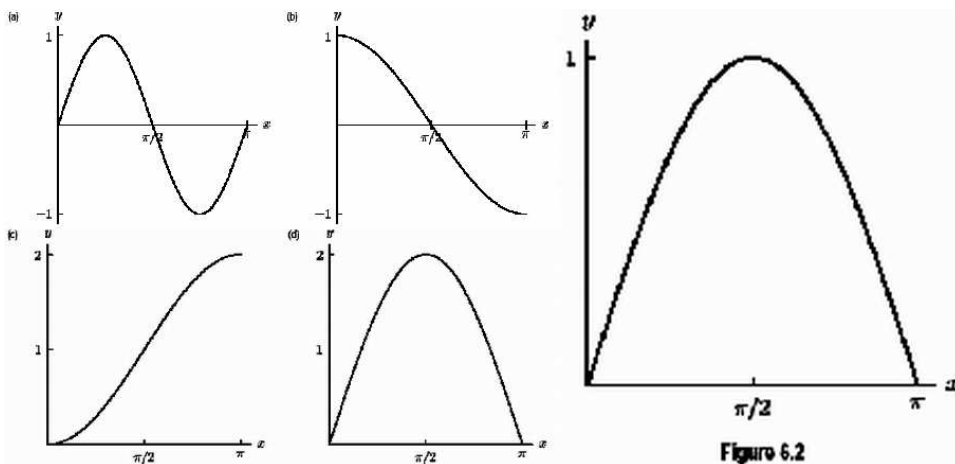


Figure 6.2

3. Consider the graph of $f'(x)$ shown below. Which of the functions with values from the table could represent $f(x)$?

Table 6.1

x	0	2	4	6
(a) $g(x)$	1	3	4	3
(b) $h(x)$	5	7	8	7
(c) $j(x)$	32	34	35	34
(d) $k(x)$	-9	-7	-6	-7

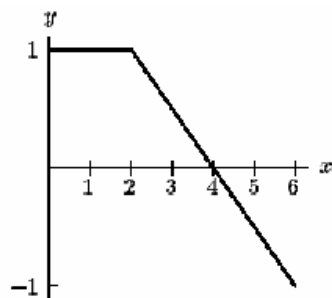


Figure 6.4

1. (a) only
2. (a), (b), and (c) only
3. All of them
4. None of them

4. Figure 6.4 shows $f'(x)$. If $f(2) = 5$, what is $f(0)$?

Table 6.1

x	0	2	4	6
(a) $g(x)$	1	3	4	3
(b) $h(x)$	5	7	8	7
(c) $j(x)$	32	34	35	34
(d) $k(x)$	-9	-7	-6	-7

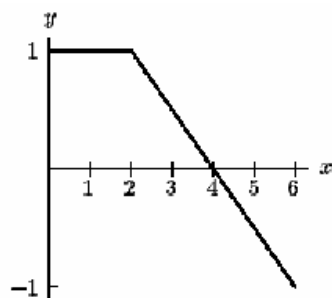


Figure 6.4

- (a) 0
- (b) 3
- (c) 7
- (d) Can't tell

5. The graph of f is given below. Let $F'(x) = f(x)$. Where does F have critical points?

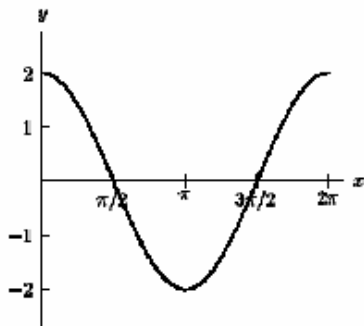


Figure 2.9

- (a) $x = 0, \pi, 2\pi$
- (b) $x = \pi$
- (c) $x = \pi/2, 3\pi/2$
- (d) None of the above

6. The graph of f is given below. Let $F'(x) = f(x)$. Where does F have a global max on $[0, 2\pi]$?

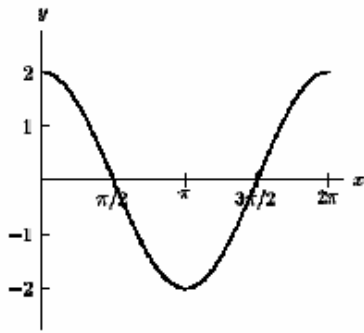
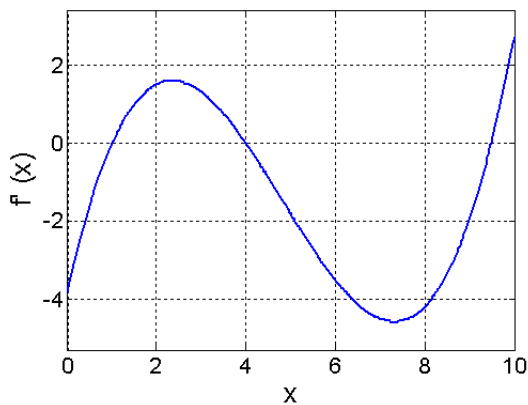


Figure 2.9

- (a) $x = 0$
- (b) $x = \pi/2$
- (c) $x = \pi$
- (d) $x = 3\pi/2$
- (e) $x = 2\pi$

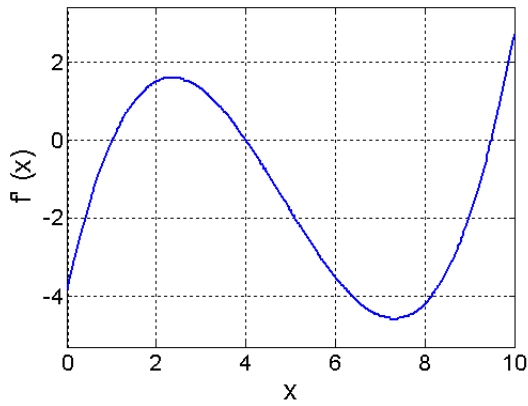
7. The derivative, f' , of a function f is plotted below. At approximately what value of x does f reach a maximum, on the range $[0, 10]$?



- (a) 1

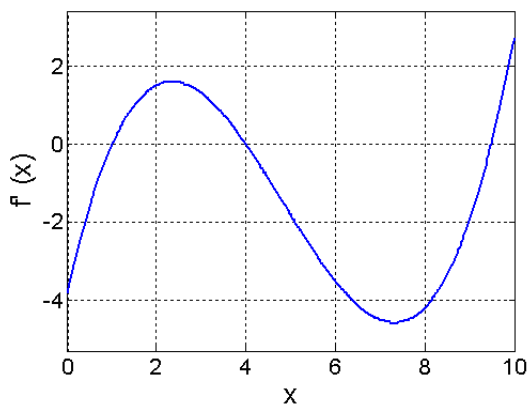
- (b) 2.5
- (c) 4
- (d) 7
- (e) 9.5

8. The derivative, f' , of a function f is plotted below. If we know that the maximum value of f on this range is 20, what is $f(9.5)$?



- (a) $f(9.5) \approx 6$
- (b) $f(9.5) \approx 14$
- (c) $f(9.5) \approx -14$
- (d) $f(9.5) \approx 34$

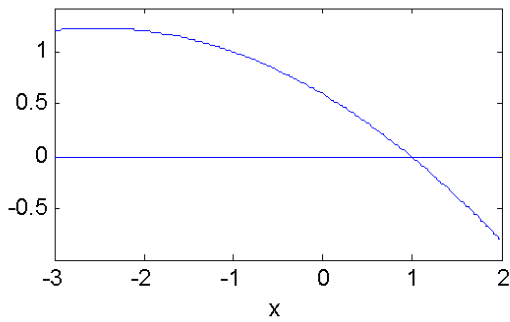
9. The derivative, f' , of a function f is plotted below. When is f concave up?



- (a) $x > 5$
- (b) $x < 5$

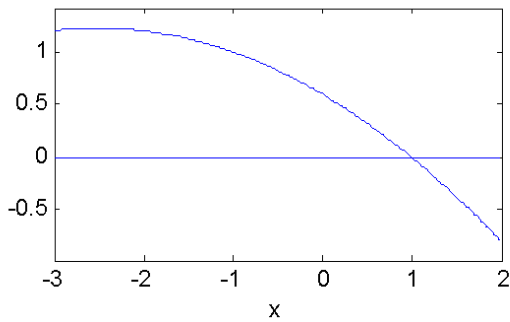
- (c) $x < 2.5$ and $x > 7.5$
- (d) $2.5 < x < 7.5$
- (e) $1 < x < 4$ and $x > 9.5$

10. The graph below shows the second derivative, f'' of a function, and we know $f(1) = 3$ and $f'(1) = 0$. Is $f'(2)$ positive or negative?



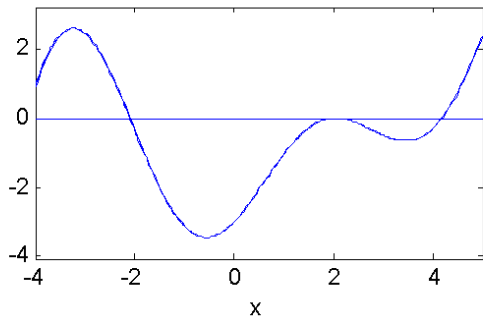
- (a) $f'(2) > 0$
- (b) $f'(2) < 0$
- (c) It is impossible to tell without further information.

11. The graph below shows the second derivative, f'' of a function, and we know $f(1) = 3$ and $f'(1) = 0$. Is $f(-3)$ bigger than 3 or smaller than 3?



- (a) $f(-3) > 3$
- (b) $f(-3) < 3$
- (c) It is impossible to tell without further information.

12. The figure below is the graph of $f'(x)$. Where is the global maximum of f on $[-4, 4]$?



- (a) $x = -3.2$
- (b) $x = -2$
- (c) $x = -0.8$
- (d) $x = 2$
- (e) $x = 4$