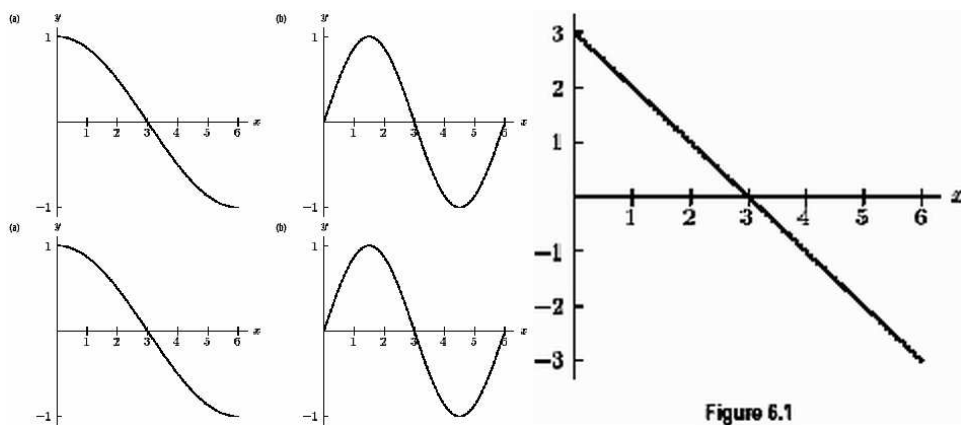


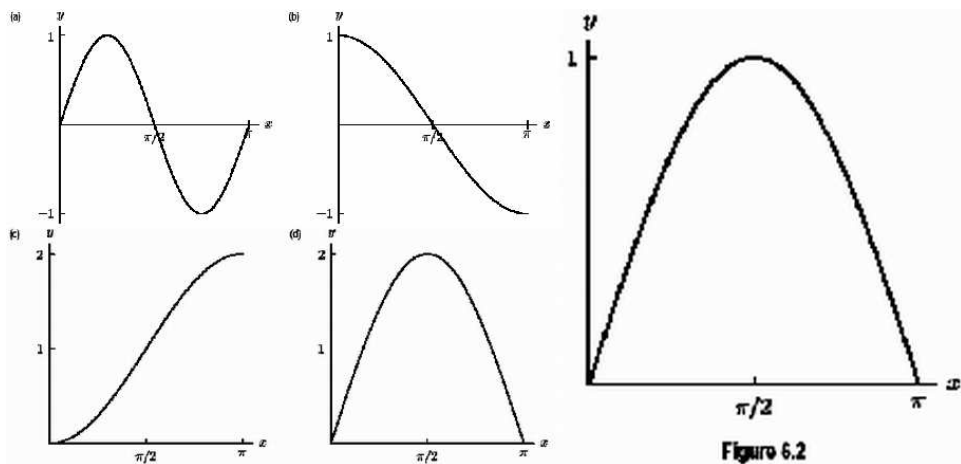
# Classroom Voting Questions: Calculus II

## 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.



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

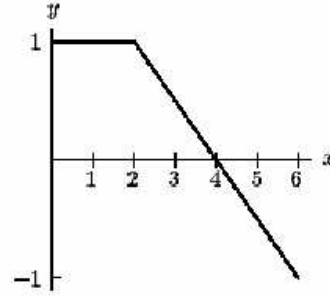


Figure 6.4

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
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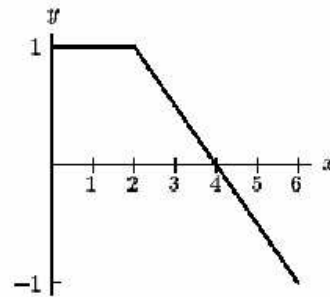


Figure 6.4

- (a) 0
  - (b) 3
  - (c) 7
  - (d) Cant tell
5. The graph of  $f$  is given below. Let  $F'(x) = f(x)$ . Where does  $F$  have critical points?

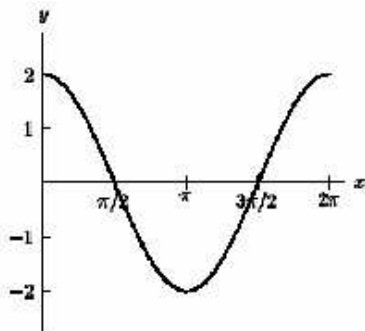


Figure 2.9

- (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  $[0, 2\pi]$ ?

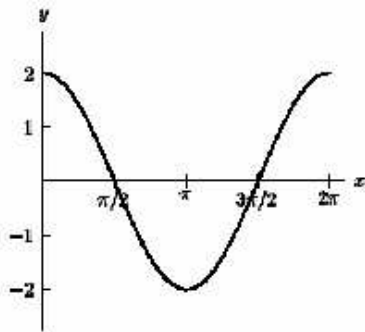
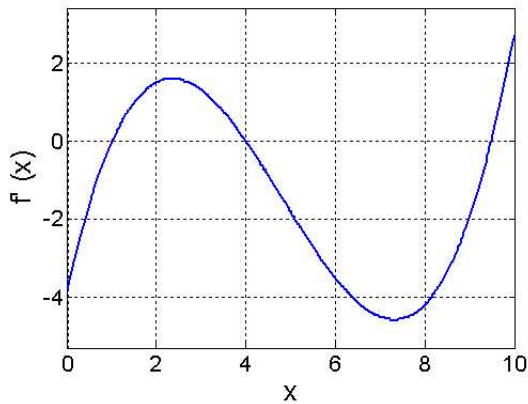


Figure 2.9

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

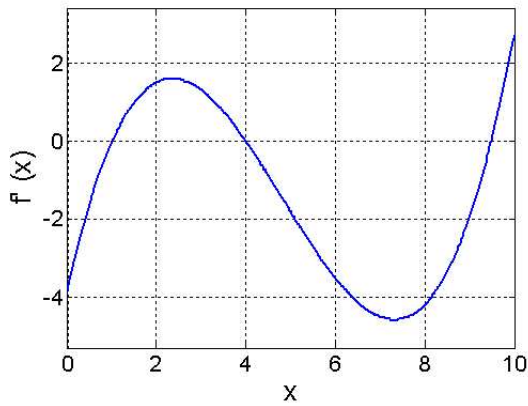
7. The derivative,  $f'$ , of a function  $f$  is plotted below. At approximately what value of  $x$  does  $f$  reach a maximum, on the range  $[0, 10]$ ?



- (a) 1

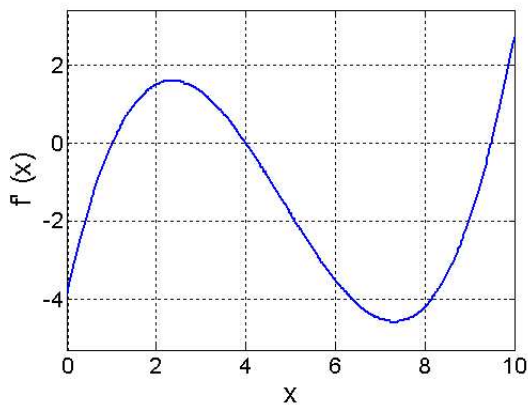
- (b) 2.5
- (c) 4
- (d) 7
- (e) 9.5

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)  $f(9.5) \approx 34$

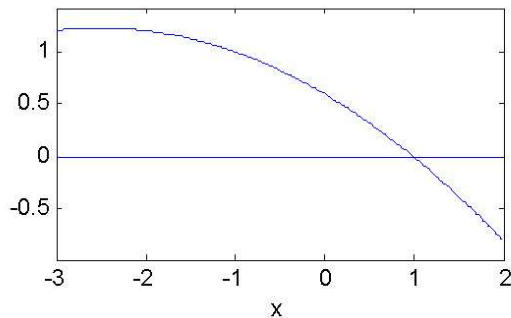
9. The derivative,  $f'$ , of a function  $f$  is plotted below. When is  $f$  concave up?



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

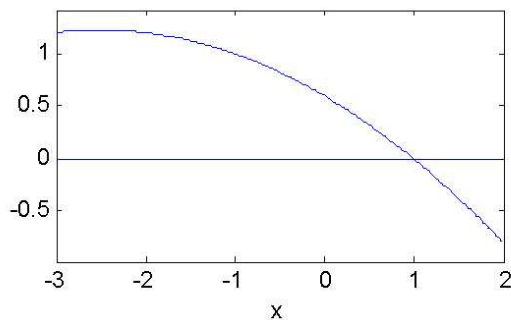
- (c)  $x < 2.5$  and  $x > 7.5$
- (d)  $2.5 < x < 7.5$
- (e)  $1 < x < 4$  and  $x > 9.5$

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?



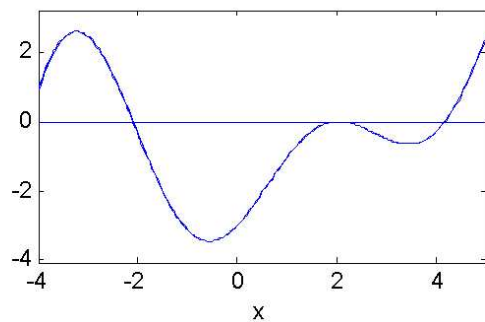
- (a)  $f'(2) > 0$
- (b)  $f'(2) < 0$
- (c) It is impossible to tell without further information.

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)  $x = 4$