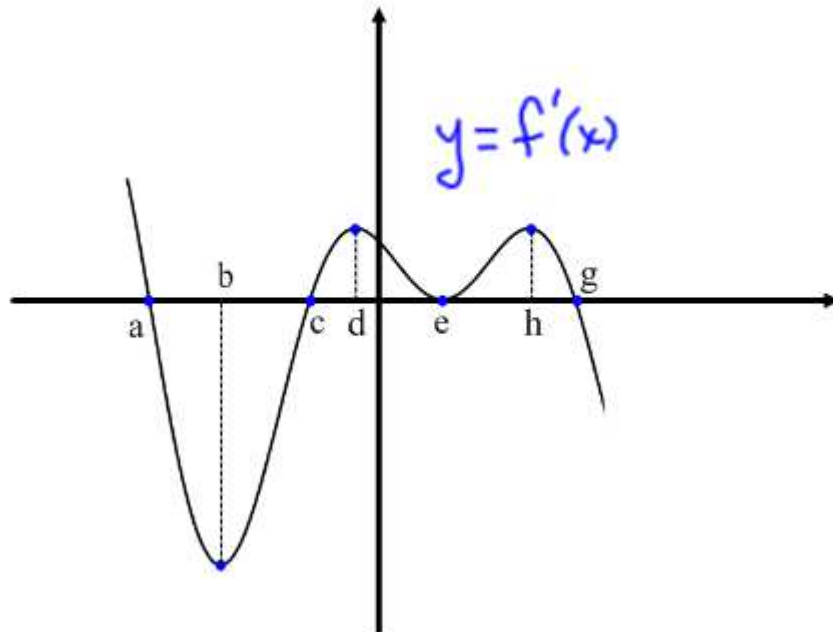


## EMCF 19

Log in to CourseWare at <http://www.casa.uh.edu>  
and access the answer sheet by clicking on the EMCF tab.

All of the questions below refer to the function  $f$ .

The graph of the derivative of  $f$  is shown below.



1. Give the number of critical numbers of  $f$ .
  - a. 3
  - b. 4
  - c. 5
  - d. 6
  - e. 7
  - f. None of these.

2. Give the number of values of  $x$  where  $f$  has a local maximum.
- 0
  - 1
  - 2
  - 3
  - 4
  - None of these.
3. Give the number of values of  $x$  where  $f$  has a local minimum.
- 0
  - 1
  - 2
  - 3
  - 4
  - None of these.
4. Which of the following is true?
- $x = a$  is not a critical number for  $f$
  - $x = a$  is a critical number for  $f$  and  $f$  has a local minimum at  $x = a$ .
  - $x = a$  is a critical number for  $f$  and  $f$  has a local maximum at  $x = a$ .
  - $x = a$  is a critical number for  $f$ , but  $f$  has neither a local maximum nor a local minimum at  $x = a$ .
  - None of these.
5. Which of the following is true?
- $x = b$  is not a critical number for  $f$
  - $x = b$  is a critical number for  $f$  and  $f$  has a local minimum at  $x = b$ .
  - $x = b$  is a critical number for  $f$  and  $f$  has a local maximum at  $x = b$ .
  - $x = b$  is a critical number for  $f$ , but  $f$  has neither a local maximum nor a local minimum at  $x = b$ .
  - None of these.
6. Which of the following is true?
- $x = c$  is not a critical number for  $f$
  - $x = c$  is a critical number for  $f$  and  $f$  has a local minimum at  $x = c$ .
  - $x = c$  is a critical number for  $f$  and  $f$  has a local maximum at  $x = c$ .
  - $x = c$  is a critical number for  $f$ , but  $f$  has neither a local maximum nor a local minimum at  $x = c$ .
  - None of these.
7. Which of the following is true?
- $x = d$  is not a critical number for  $f$
  - $x = d$  is a critical number for  $f$  and  $f$  has a local minimum at  $x = d$ .
  - $x = d$  is a critical number for  $f$  and  $f$  has a local maximum at  $x = d$ .
  - $x = d$  is a critical number for  $f$ , but  $f$  has neither a local maximum nor a local minimum at  $x = d$ .
  - None of these.

8. Which of the following is true?
- a.  $x = e$  is not a critical number for  $f$
  - b.  $x = e$  is a critical number for  $f$  and  $f$  has a local minimum at  $x = e$ .
  - c.  $x = e$  is a critical number for  $f$  and  $f$  has a local maximum at  $x = e$ .
  - d.  $x = e$  is a critical number for  $f$ , but  $f$  has neither a local maximum nor a local minimum at  $x = e$ .
  - e. None of these.
9. Which of the following is true?
- a.  $x = h$  is not a critical number for  $f$
  - b.  $x = h$  is a critical number for  $f$  and  $f$  has a local minimum at  $x = h$ .
  - c.  $x = h$  is a critical number for  $f$  and  $f$  has a local maximum at  $x = h$ .
  - d.  $x = h$  is a critical number for  $f$ , but  $f$  has neither a local maximum nor a local minimum at  $x = h$ .
  - e. None of these.
10. Which of the following is true?
- a.  $x = g$  is not a critical number for  $f$
  - b.  $x = g$  is a critical number for  $f$  and  $f$  has a local minimum at  $x = g$ .
  - c.  $x = g$  is a critical number for  $f$  and  $f$  has a local maximum at  $x = g$ .
  - d.  $x = g$  is a critical number for  $f$ , but  $f$  has neither a local maximum nor a local minimum at  $x = g$ .
  - e. None of these