

2. [14 points] The table for the *derivative* of a function  $h$  with continuous first derivative is given below. Assume that between each consecutive value of  $x$ , the derivative  $h'$  is either increasing or decreasing. For each statement below, indicate whether the statement is true, false, or cannot be determined from the information given. No partial credit will be given.

$x$	-4	-3	-2	-1	0	1	2	3	4
$h'(x)$	2	3	1	-3	-4	-2	0	2	1

- a.) The function  $h$  has a local maximum on the interval  $-2 < x < -1$ .

 True

 False

 Not enough information

- b.) The function  $h$  is negative on the interval  $-1 < x < 1$ .

 True

 False

 Not enough information

- c.) The function  $h$  is concave up on the interval  $0 < x < 4$ .

 True

 False

 Not enough information

- d.) The function  $h$  is decreasing on the interval  $-3 < x < -2$ .

 True

 False

 Not enough information

- e.) The function  $h$  has an inflection point on the interval  $-1 < x < 1$ .

 True

 False

 Not enough information

- f.) The derivative function,  $h'$ , has a critical point at  $x = 2$ .

 True

 False

 Not enough information

- g.) The second derivative function,  $h''$ , is positive on the interval  $0 < x < 3$ .

 True

 False

 Not enough information