

10. [8 points] Some information about the derivative $p'(x)$ and the second derivative $p''(x)$ of a function $p(x)$ is provided in the table below.

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

Assume that

- $p''(x)$ is defined and continuous on the interval $(-\infty, \infty)$ and
- the values of both $p'(x)$ and $p''(x)$ are strictly positive or strictly negative between consecutive table entries.

For each question below, circle **all** correct choices. You do not need to justify your answers.

- a. [2 points] On which of the following intervals must $p(x)$ be always concave up?

$-4 < x < -3$ $-3 < x < -2$ $-2 < x < -1$
 $-1 < x < 0$ $0 < x < 1$ $1 < x < 2$ NONE OF THESE

- b. [2 points] At which of the following values of x must $p(x)$ have a local minimum?

$x = -3$ $x = -2$ $x = -1$ $x = 0$ $x = 1$ NONE OF THESE

- c. [2 points] At which of the following values of x must $p(x)$ have an inflection point?

$x = -3$ $x = -2$ $x = -1$ $x = 0$ $x = 1$ NONE OF THESE

- d. [2 points] At which value(s) of x does $p(x)$ attain a global maximum on the interval $[-4, 0]$?

$x = -4$ $x = -3$ $x = -2$ $x = -1$ $x = 0$
 NONE OF THESE CANNOT BE DETERMINED