

7. [14 points] The table of values below gives information about the first and second derivatives of a function $f(x)$.

x	-3	-2	-1	0	1	2	3
$f'(x)$	-2	0	-1	0	2	0	-2
$f''(x)$	2	0	0	0	0	-2	-1

Assume that $f''(x)$ is **continuous** on $[-3, 3]$ and that the values of $f'(x)$ and $f''(x)$ are either **strictly positive** or **strictly negative** between consecutive table entries. You do not need to show work or give an explanation for this problem, but any unclear answers will be marked as incorrect.

- a. [4 points] On which of the following intervals is $f''(x) < 0$? Circle ALL correct answers.

$$-3 < x < -2 \quad -2 < x < -1 \quad -1 < x < 0 \quad 0 < x < 1 \quad 1 < x < 2 \quad 2 < x < 3$$

- b. [10 points] For each of the following x values, circle ALL answers that apply. If none of the choices apply, don't circle anything.

At $x = -2$, f has a **local maximum** **local minimum** **inflection point**

At $x = -1$, f has a **local maximum** **local minimum** **inflection point**

At $x = 0$, f has a **local maximum** **local minimum** **inflection point**

At $x = 1$, f has a **local maximum** **local minimum** **inflection point**

At $x = 2$, f has a **local maximum** **local minimum** **inflection point**