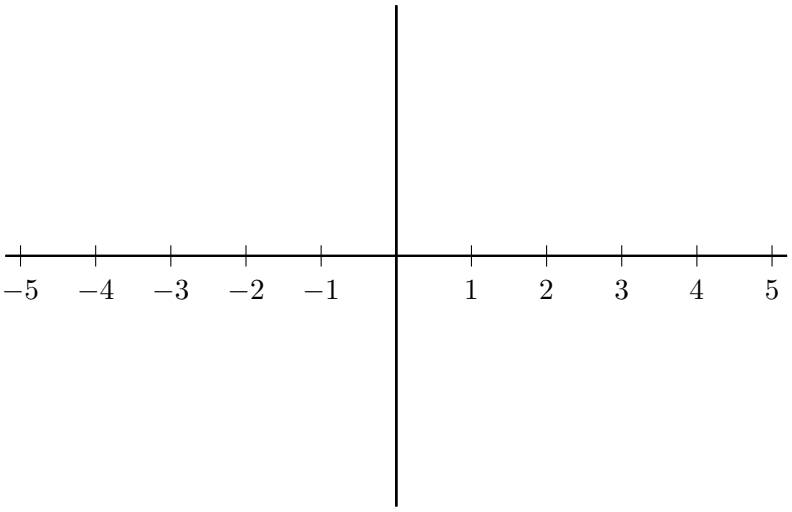
8. [7 points] For each of parts (a) and (b) below, draw a graph of a single function with all of the listed properties. If there is no function satisfying all the properties, circle NO SUCH FUNCTION EXISTS.

Note: If "NO SUCH FUNCTION EXISTS." is circled, the graph will not be graded.

a. [3 points] A function $j(x)$ defined on the interval $-5 < x < 5$ with the following two properties:

- $j''(x) > 0$ everywhere.
- $j(x)$ has a local max at $x = 0$.

Draw a graph: OR Circle: NO SUCH FUNCTION EXISTS.



b. [4 points] A function $k(x)$ defined on the interval $-5 < x < 5$ with the following three properties:

- $k(x)$ is continuous everywhere except at $x = 3$.
- $k(x)$ is differentiable everywhere except at $x = -2$ and $x = 3$.
- $k(x)$ has an inflection point at $x = 0$.

Draw a graph: OR Circle: NO SUCH FUNCTION EXISTS.