1. (4 points) Let $f(x)$ be a function that is everywhere differentiable. Suppose that you know the values for $f'(x)$ given in the table below.

$x =$	-3	-2	-1	0	1
$f'(x) =$	2	0.5	-0.5	-1	-0.5

a. Identify the location of any critical points and local maxima or local minima, if any, that this data indicates $f(x)$ has.

b. If possible, identify the location of any inflection points of $f(x)$, and the concavity of the graph of $f(x)$. If it is not possible, briefly explain why.

2. (4 points) Consider the family of functions given by $y = a \ln(x) + bx^2$, with a and b both positive. If the graph of a member of this family has an inflection point at $x = 3$, what can you say about a and b?