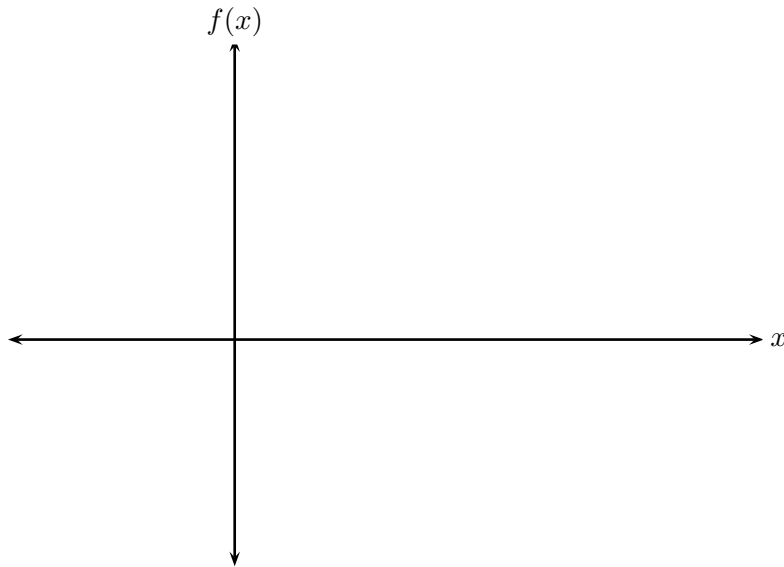


7. (9 points) A continuous, differentiable function defined for all x has all of the following properties:

- $f'(x) = 0$ at $x = 0$ and $x = 3$
- $f(3) = 0$
- $f'(-1) = -2$
- f' is increasing for $x < 2$
- $f' \geq 0$ for $x > 0$
- $\lim_{x \rightarrow -\infty} f(x) = \infty$

(a) (3 points) Sketch a possible graph of f



(b) (2 points) How many zeroes does f have? Explain your reasoning.

(c) (2 points) What can you say about the location of the zeroes? Explain your reasoning.

(d) (2 points) Is it possible that $f'(-2) = -1$? Explain your reasoning.