

2. (11points) Let $f(x)$ be a **continuous** function defined for all real numbers x . Sketch a possible graph of f , given that

- $f(4) = 2$;
- $f'(x) > 0$ and $f''(x) < 0$ for $x < 2$;
- $f'(2) = 0$ and $f''(2) = 0$;
- $f''(x) > 0$ for $2 < x < 4$;
- $f''(4) = 0$;
- $f''(x) < 0$ for $x > 4$;
- $f'(x) > 0$ for $2 < x < 5$;
- $f'(5) = 0$;
- $f'(x) < 0$ for $x > 5$.

