2. (11 points) 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 \( x > 5 \).