1. Sketch the graph of a function \( y = f(x) \) such that \((0, 6), (2, 0)\) and \((4, -6)\) are on the graph; \( f'(x) \leq \) for \( 0 \leq x \leq 4 \), \( f'(2) = f''(2) = 0 \), and \( f''(x) > 0 \) for \( x < 2 \), \( f''(x) < 0 \) for \( x > 2 \).

2. Sketch a negative, increasing function on \([0, 5]\) that is concave down and satisfies \( f(0) = -5 \), and \( f(2) = -4 \).

3. Use the first derivative test to determine the relative maximum and relative minimum points of \( f(x) = \frac{4}{3}x^3 - x + 5 \).

4. Use the second derivative test to determine the local maximum and local minimum points of \( f(x) = \frac{1}{3}x^3 - x^2 - 3x + 5 \).

5. Find the critical numbers of the function \( f(x) = \frac{x - 1}{x^3 + 3} \).