CRITICAL POINTS - PART 1

1. Use the graph of \( f(x) \) shown below with domain \([-3,12]\) to find the following:

   ![Graph of f(x)](image)

   A. Find the values of \( x \) where \( f'(x) = 0 \).

   B. Find the values of \( x \) where \( f'(x) \) is undefined.

   C. Find the inflection points of \( f(x) \).

   D. Find all the local maximums and minimums of \( f(x) \).

   E. Find all the global maximums and minimums of \( f(x) \).

2. Using the graph and your answers to the questions above, do the following:

   A. Label all the critical points on a number line. Determine the sign of \( f'(x) \) between each critical point. How does the information on this number line help you determine which critical points correspond to local maximums, minimums, or neither?

   B. Label all the points on a number line where \( f''(x) \) is either zero or undefined. Determine the sign of \( f''(x) \) between each marked point. How does the information on this number line help you determine which points correspond to inflection points?