Q1. Use limits to determine whether or not \( x = 1 \) is a vertical asymptote of \( f(x) = \frac{x^2 - 2x + 1}{2x^2 + 2x - 4} \).

Q2. Let \( f(x) = \sqrt{1 + \sqrt{x}} \). Use the definition of derivative to find \( f'(x_0) \).
Q.No.3:- Use the limits to find all horizontal asymptotes to the curve of the function:

\[ f(x) = \sqrt{4x^2 + 2x} - \sqrt{4x^2 + 5x} \]