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So, $D(1) = 0$ and $D(-2) = 0$

Since $P(1) = -1 \neq 0$ and $P(-2) = -4 \neq 0$, we can conclude:

$x = 1$ and $x = -2$ are the vertical asymptotes of $f(x) = \frac{x-2}{x^2+x-2}$