Find the following for \( f(x) = 5x^\frac{2}{3} - x^\frac{5}{3} \) (if they exist; if they don’t exist, state so). Use this information to graph \( f \).

[1.5] 1a.) critical numbers: ______________________

[1.5] 1b.) relative maximum(s) occur at \( x = \) ______________________

[1.5] 1c.) relative minimum(s) occur at \( x = \) ______________________

[1.5] 1d.) The absolute maximum of \( f \) on the interval \([0, 5]\) is _______ and occurs at \( x = \) ______________

[1.5] 1e.) The absolute minimum of \( f \) on the interval \([0, 5]\) is _______ and occurs at \( x = \) ______________

[1.5] 1f.) Inflection point(s) occur at \( x = \) ______________________

[1.5] 1g.) \( f \) increasing on the intervals ______________________

[1.5] 1h.) \( f \) decreasing on the intervals ______________________

[1.5] 1i.) \( f \) is concave up on the intervals ______________________

[1.5] 1j.) \( f \) is concave down on the intervals ______________________

[1.5] 1k.) Equation(s) of vertical asymptote(s) ______________________

[4] 1l.) Equation(s) of horizontal and/or slant asymptote(s) ______________________

[4.5] 1m.) Graph \( f \)