Quiz **Name**

Consider the function $f(x) = x^{\frac{2}{3}}(x-4)$. Answer the following. Put in appropriate details.

i. What is the domain of $f(x)$?

ii. Compute the derivative of $f(x)$. Then verify that $f'(x) = \frac{5x-8}{3x^{\frac{1}{3}}}$.

iii. Determine the critical points of the function.

iv. Determine the intervals over which $f(x)$ is increasing or decreasing.