Quiz **Name**

1. Consider the function $f(x) = 3x^{\frac{2}{3}} - x^2$. Find the intervals for which this function is increasing and those for which it is decreasing. Determine the x-coordinates of the local minima and maxima.

2. By comparing $f(x)$ with $3x^{\frac{2}{3}}$ and $-x^2$, determine the behavior of the graph of $y = f(x)$ for x large (positively and negatively) and for x small. Use this information and your findings from (1) above to sketch the graph of $f(x) = 3x^{\frac{2}{3}} - x^2$ in the x-y plane below.