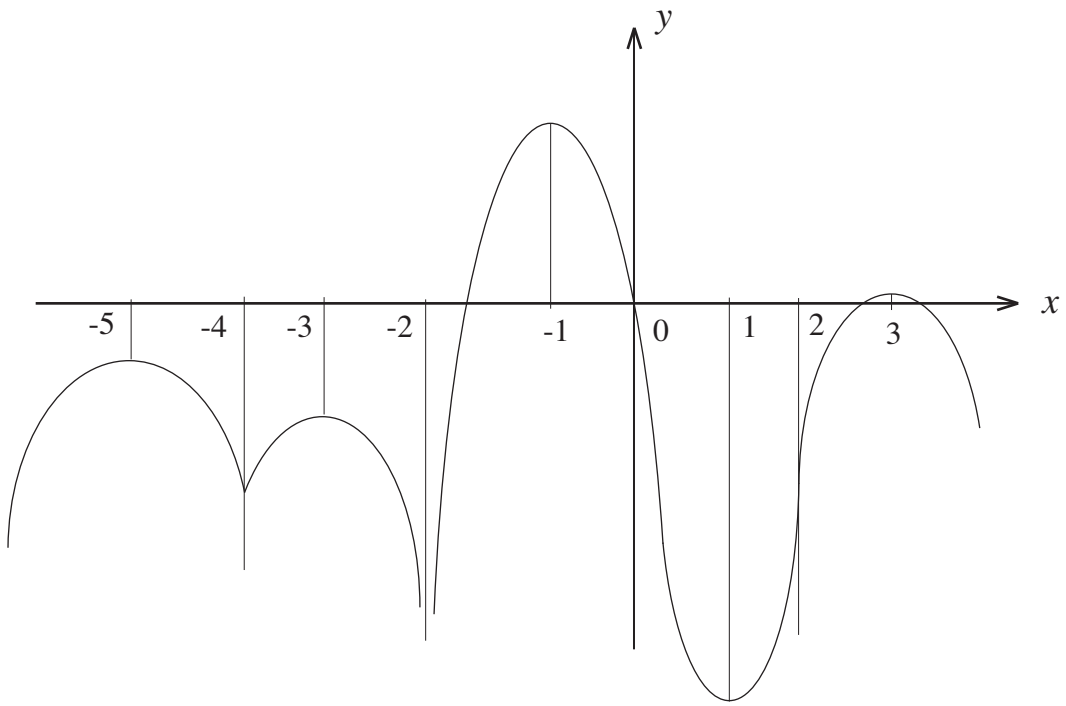
Quiz 5. March 28, 08. Name:

1. Consider the function $f(x) = \frac{1}{x^{\frac{1}{2}}}$. Determine the slope of the tangent line to the graph of this function at the point $(4, \frac{1}{2})$ by setting up a limit and then evaluating it.

2. Find the derivative of the function $f(x) = \frac{(2x^4+6)^7}{(x^4+7x^3)^2}$. Complete the differentiation, but don't simplify beyond that.

3. Study the graph of a function $y = f(x)$ below. The values of x for which this function is not differentiable are: $x =$, , , , ... Provide the reasons why the function is not differentiable at the points you have selected.



Estimate the values of the derivative of f at $x = -3, 0$, and $x = 2$. Explain how you reached your estimates.