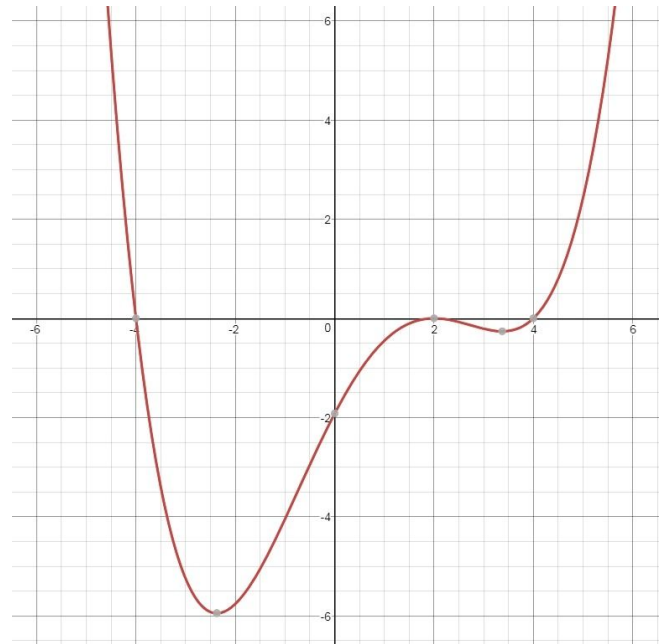


C Level Questions

1. Give 3 reasons why the function shown could NOT be represented by the polynomial $f(x) = -(x+4)^2(3x-2)(x-4)$. Be specific.



2. Use the degree and leading coefficient of the polynomial to describe (without graphing) what happens to $g(x) = 3(x-1)(x-2)(x-3)^3$ when $x \rightarrow -\infty$ and when $x \rightarrow \infty$.

A/B Level Questions

3. Jake takes a job as a financial analyst. He has been following a tech company that his firm is considering buying. The profits for the tech company over the last three years can be modeled with the polynomial $p(x) = (x^2 - 64)(x^2 - 10x + 16)$, where x = months since January 2013 and y = monthly profit in \$1000.

a. What is the constant for the polynomial and what does it tell you about the tech company?

b. Find all months in which the company earned zero profit.

4. Given that $h(3) = 0$ and $h(4) = 0$, for the polynomial $h(x) = x^4 - 15x^3 + 48x^2 + 44x - 240$, factor $h(x)$ and find all the roots of the polynomial.