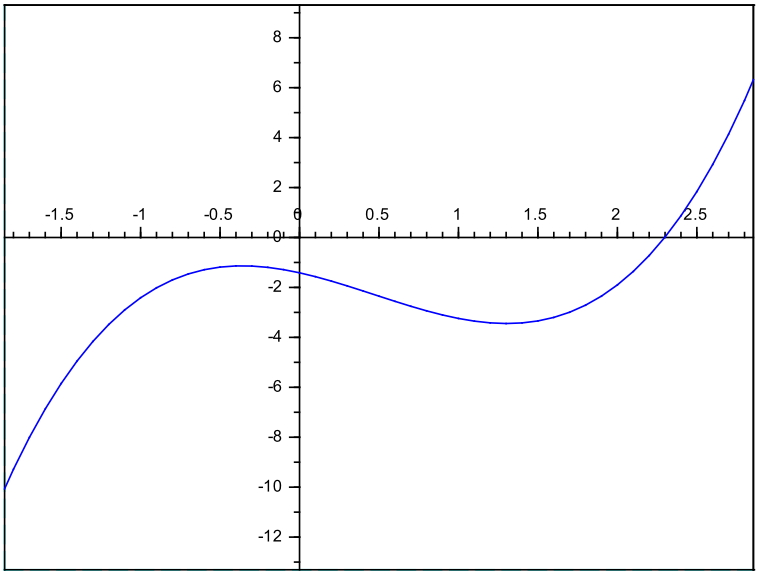
Homework problem (due Wednesday, Febrauary 26th): The function $1/(x^2-1)$ has a partial fraction decomposition with **two** summands:

$$\frac{1}{x^2-1} = \frac{0.5}{x-1} + \frac{-0.5}{x+1}$$

Below is a graph of the funciton $x^3 - \sqrt{2}x^2 - \sqrt{2}x - \sqrt{2}$:



Find how many summands there are in the partial fraction decomposition of

$$\frac{1}{x^3 - \sqrt{2}x^2 - \sqrt{2}x - \sqrt{2}}.$$

Show all reasoning.
Hint: Don't try to find the decomposition. Use the Fundamental Theorem of Algebra.