

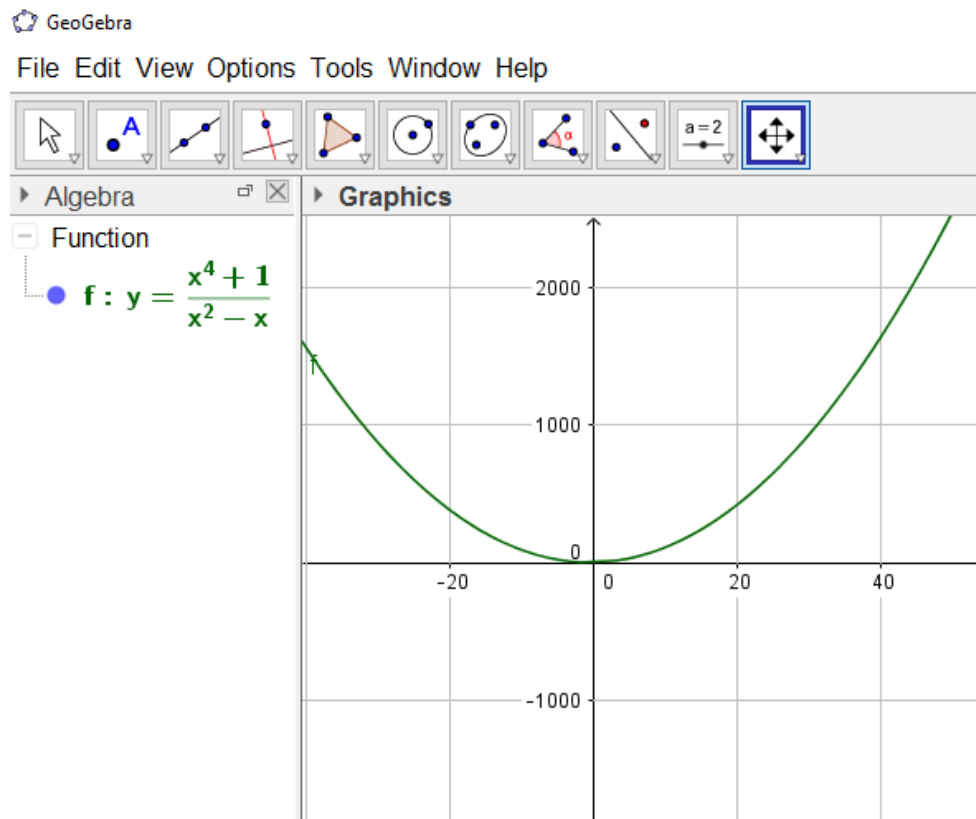
Function Graph I*

In an A Level class the teacher invites students to use GeoGebra to solve the following problem:

“Make the graph of function: $f(x) = \frac{x^4 + 1}{x^2 - x}$.”

This dialogue between students A and B then follows.

Student A: I made the graph, I changed the axis and it seems to me that it is a parabola. Look at the image on my screen:



Student B: This is odd, the formula is entered correctly but it is not quadratic.

Student A: Why not, x^4 divided by x^2 will make x^2 . Eventually ... it is a quadratic!

Student B: No no ... it cannot be okay, I cannot simplify this formula to get a quadratic ...

You are the teacher and you just heard this exchange between students A and B.

Questions:

- How does the graph of this function look like?
- What are the aims of using this problem in class?
- What do you think are the issues in the two students' responses?
- How would you respond to each of the two students and to the whole class?

*Inspired by Giraldo, V., Caetano, P., & Mattos, F. (2013). *Recursos Computacionais no Ensino de Matemática [Computational Resources in the Teaching of Mathematics]*. Rio de Janeiro, Brazil: SBM.

