A small inaccuracy in the textbook cover

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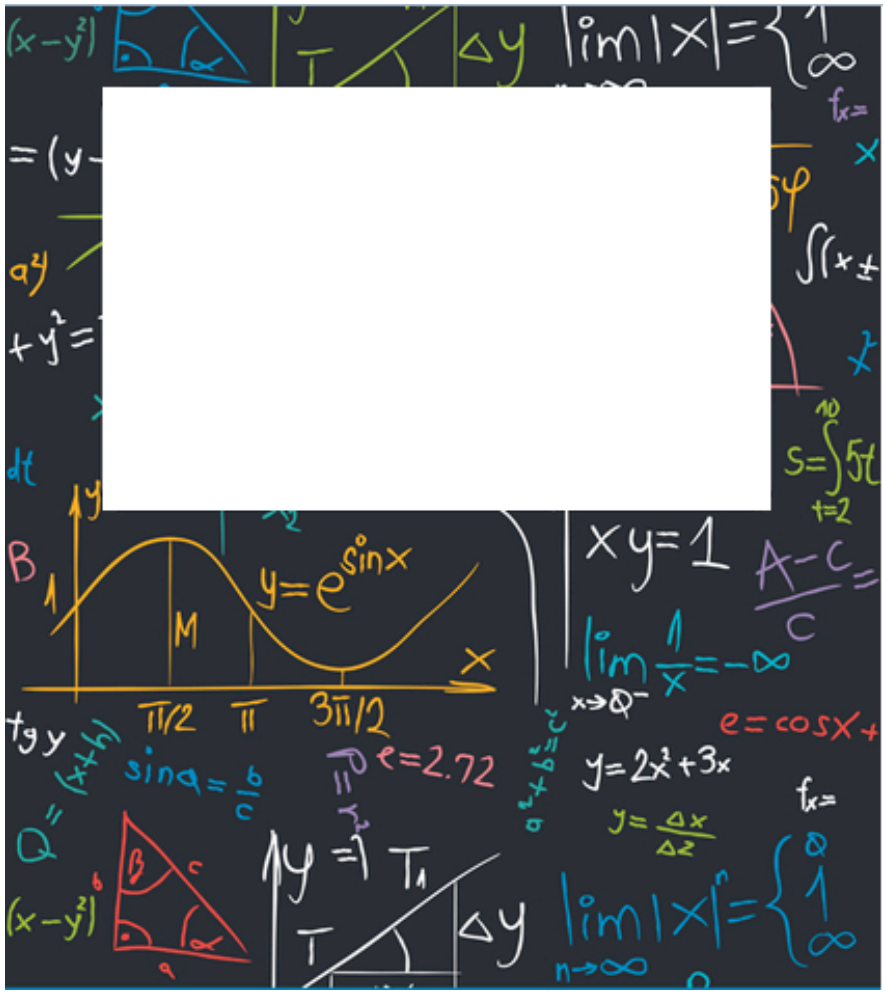
Foreword

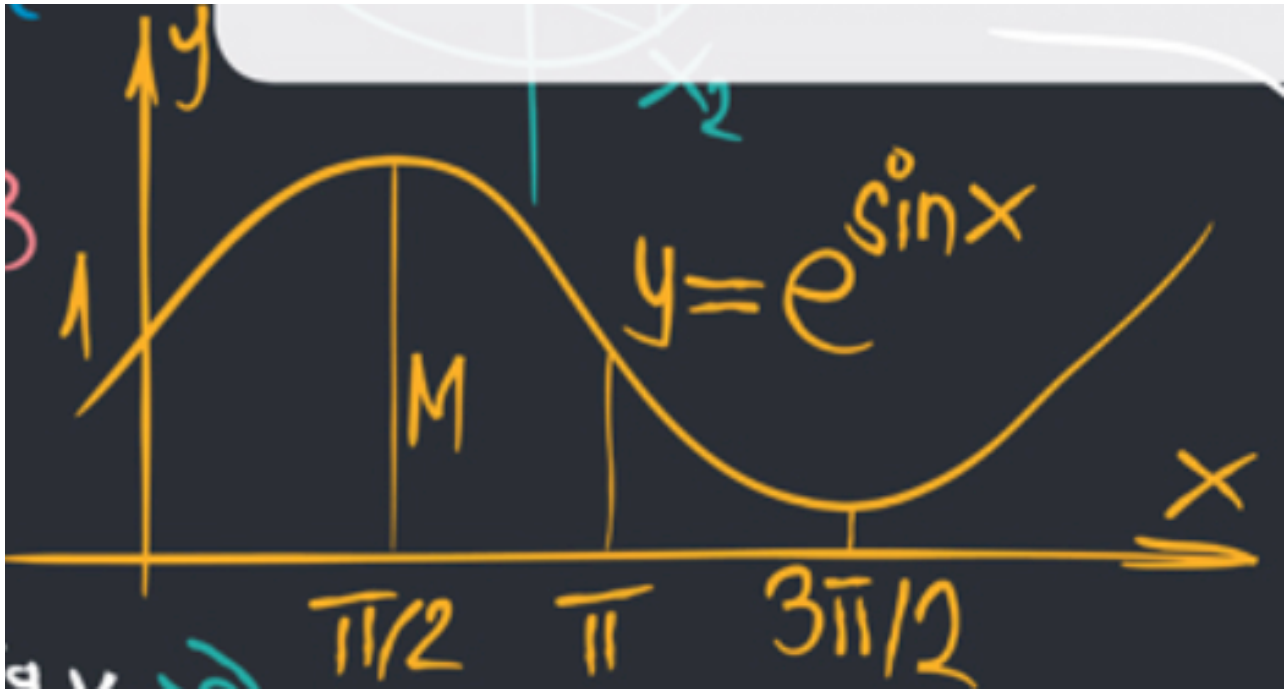
- In these slides we discuss a little inaccuracy found in the cover of the textbook used in the course Mathematics.
- The main reason why we wrote these observations is not to make an unproductive criticism, but to encourage students to always read texts critically, above all the notes written by the teacher, that is by Luciano Battaia!
- A second, more personal reason is: *If the teacher makes a few mistakes during class, then it is not such a strange thing*!

The cover of the textbook



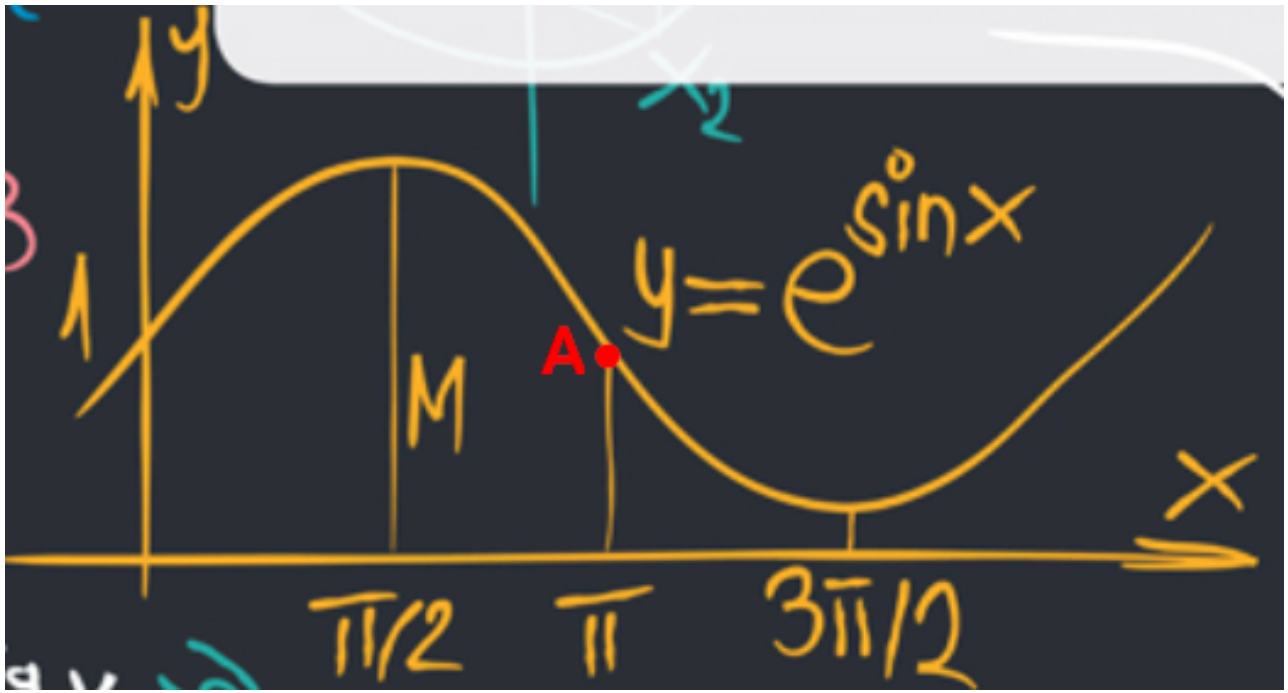
A zoom on the involved part

The part of the cover we are interested in: the graph of the function $\mathrm{e}^{\sin x}$.



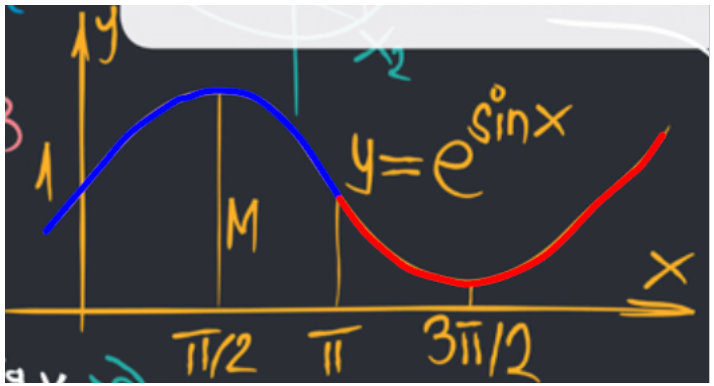
Is this graph symmetric?

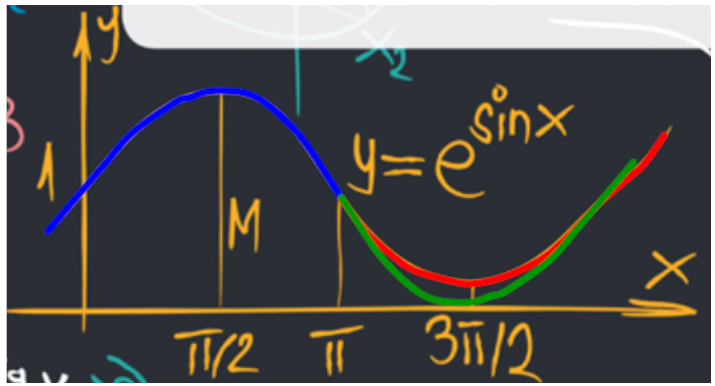
At first sight this graph seems to be symmetric with respect to the point A.



Yes it is, almost approximately!

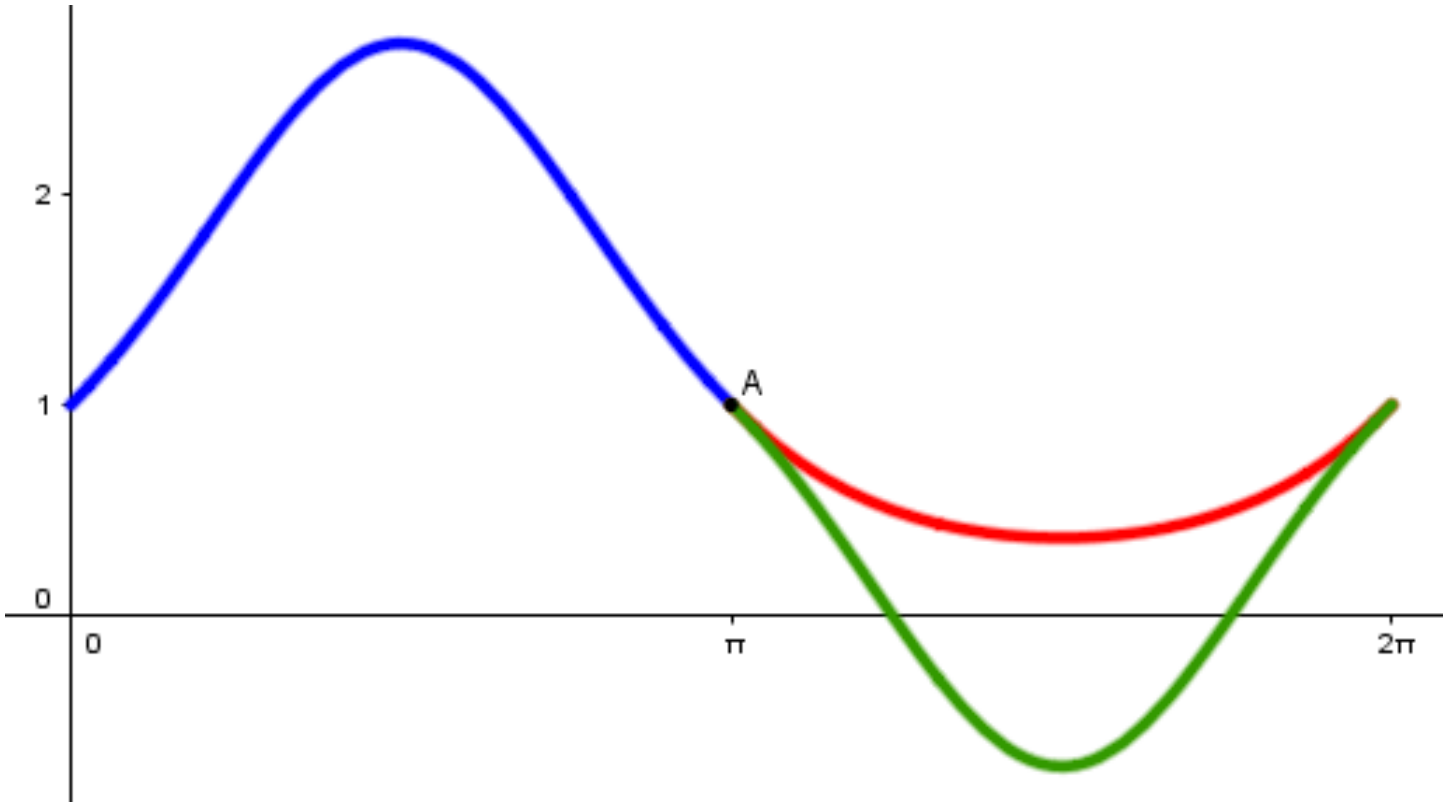
If we cut the left part of the graph and rotate it 180 degrees we see that in effect it is almost (not exactly) symmetric!





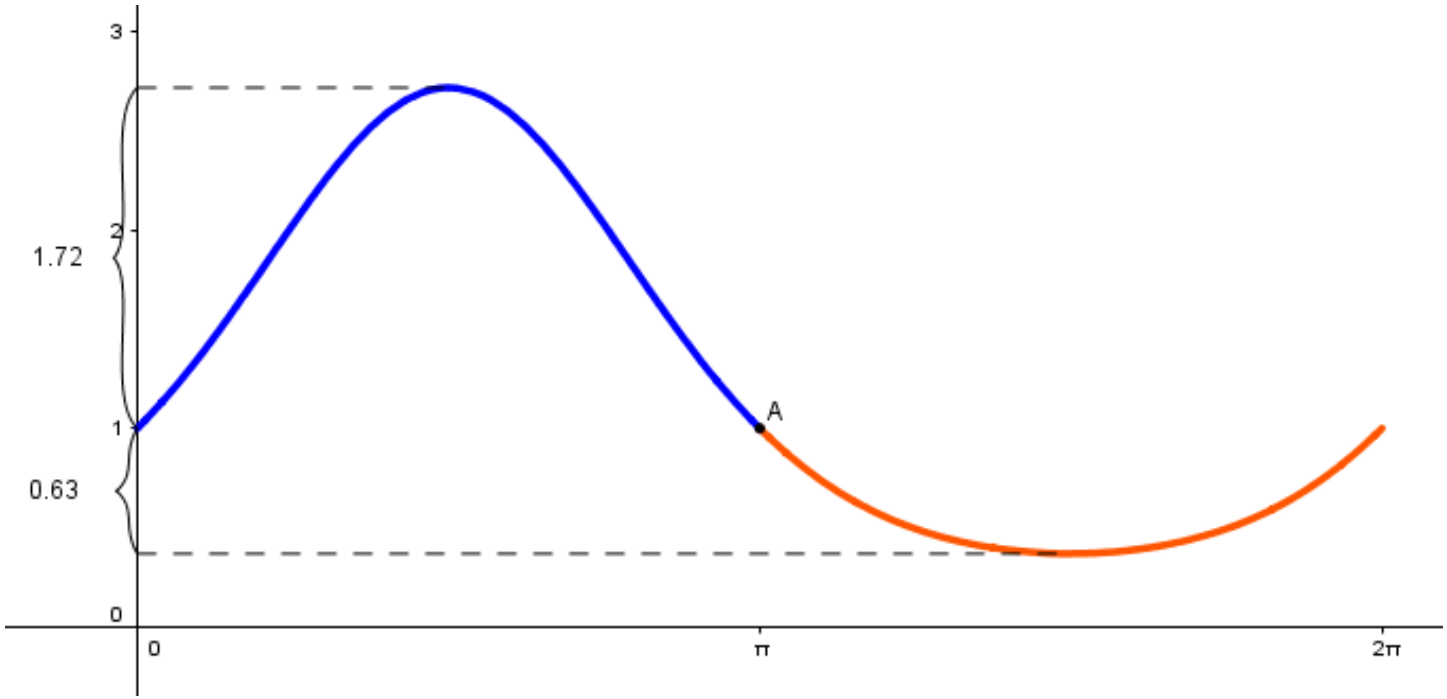
No symmetry at all! - 1

In fact there is no symmetry at all, as we can see using, for example, Geogebra. The two halves of the graph are completely different!



No symmetry at all! - 2

This means, for example, that the increase from the initial value to the global maximum is about three times the decrease from the initial value to the global minimum, and this is important from an economical point of view!



Conclusion

Pay the greatest attention when plotting function graphs by hand: they need not be precise, but they must respect the significant properties!