

**Mathematical reasoning, solving problems, proving or refuting
conjectures, exploiting surprises, etc. with the help of some
mathematical “tapas”**

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With the help of some non-standard questions or exercises (called “tapas” by us) at the undergraduate level (first, second and (at the most) third year in universities), for students in sciences having some knowledge in mathematics, we illustrate what mathematics can bring to the general scientific training of students: a rigorous reasoning, effectively solving geometric or extremal problems, as also explaining “surprises” or paradoxes, etc. Leitmotifs for these tapas are: *“It shows or proves something interesting”*, or *“If you solve it, you learn something”*, or *“You will be really surprised by the result”*. These tapas are, for most of them but not all, extracted from two recent books by the author, published at the ends of 2016 and 2017 in English by the publishing company Springer.