

M. Kreuzer, L. Robbiano: **Computational Commutative Algebra 1**. Springer, Berlin u.a. 2000, IX+321 S. ISBN 3-540-67733-X H/b DM 69,-.

This is one of the most refreshing mathematical books I have ever held in my hands. The authors do not believe in teaching by spreading out the material, but they introduce it via questions and discussions, they explore it in an intuitive fashion, exercise it through well-chosen examples, and start the reader on his own expeditions through numerous “tutorials”, i.e., guided projects. This is academic teaching at its best; if I had not seen it, I should not have believed that it can be done so well.

The material is essentially the usual one, as one expects it in an introduction to commutative algebra, with an emphasis on usefulness and computation. Term ordering and Gröbner bases occupy a prominent role. Since this is volume I of a two-volume enterprise, one will have to see the second part to get a view of the material covered. The authors have chosen not to refer to the technical literature, except for various other introductions into commutative algebra, and to disregard questions of complexity. For a textbook, both choices are wisely taken.

Not unexpectedly, the book contains an introduction to the computer algebra system *CoCoA*, whose development has been closely associated with the second author. Since *CoCoA* is freely available from the web, this should be a reasonable choice for many readers. An educated reader can easily substitute a computer algebra system of his own choice. In conclusion, this book gives students a stimulating introduction to commutative algebra very much geared to their need, and it provides numerous useful ideas to those who teach the subject.

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