ZMATH 1997b.00695
Hilton, P.; Holton, D.; Pedersen, J.
Mathematical reflections. In a room with many mirrors.
Springer, New York, NY (ISBN 0-387-94770-1). 367 p. (1997).

The purpose of this book is to show what mathematics is about, how it is done, and what it is good for. Frequent questions lead the reader to see mathematics as an accessible world of thought, where understanding can turn opaque formulae into beautiful and meaningful ideas. The text presents eight topics that serve to illustrate the unity of mathematical thought as well as the diversity of mathematical ideas. Drawn from both: pure and applied mathematics, they include: spirals in nature and in mathematics; the modern topic of fractals and the ancient topic of Fibonacci numbers; Pascal's triangle and paper folding - two topics where geometry, number theory, and algebra meet and interact; and modular arithmetic and the arithmetic of the infinite. The final chapter presents some ideas about how mathematics should be done, and hence, how it should be taught; these ideas are referred to throughout the text, whenever mathematical strategy and technique are at issue.

Classification: A25