3. L. Boutet de Monvel, *On the index of Toeplitz operators of several complex variables*, Invent. Math. **50** (1979), 249–272.

4. R. Coifman and Y. Meyer, *Au delà des opérateurs pseudodifférentiels*, Astérisque **57** (1979), 1–184.

5. H. Cordes, *On compactness of commutators of multiplications and convolutions, and boundedness of pseudodifferential operators*, J. Funct. Anal. **18** (1975), 115–131.

6. H. Cordes and E. Herman, *Gelfand theory of pseudo-differential operators*, Amer. J. Math. **90** (1968), 681–717.

7. R. Douglas, *C*-algebra extensions and K-homology*, Ann. of Math. Studies, No. 95, Princeton Univ. Press, Princeton, N. J., 1980.

8. J. Duistermaat, *Fourier integral operators*, Courant Inst. Lecture Notes, New York, 1974.

9. V. Guillemin and S. Sternberg, *Geometric asymptotics*, Math. Surveys, no. 14, Amer. Math. Soc., Providence, R. I., 1977.

10. L. Hörmander, *Pseudo-differential operators and hypoelliptic equations*, Proc. Sympos. Pure Math., vol. 10, Amer. Math. Soc., Providence, R. I., 1966, pp. 138–183.

11. ______, *The Weyl calculus of pseudodifferential operators*, Comm. Pure Appl. Math. **32** (1979), 359–443.

12. R. Howe, *On the role of the Heisenberg group in harmonic analysis*, Bull. Amer. Math. Soc. (N.S.) **3** (1980), 821–843.

13. T. Kato, *Boundedness of some pseudo-differential operators*, Osaka J. Math. **13** (1976), 1–9.

14. A. Nagel and E. Stein, *Lectures on pseudo-differential operators: Regularity theorems and applications to non-elliptic problems*, Math. Notes, Princeton Univ. Press, Princeton, N. J., 1979.

15. G. Pedersen, *C*-algebras and their automorphism groups*, Academic Press, London, 1979.

16. I. Singer, *Some remarks on operator theory and index theory*, Proc. Conf. on *K*-Theory and Operator Algebras (Athens, Georgia), Lecture Notes in Math., no. 575, Springer-Verlag, New York, 1977, pp. 128–138.

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Dimension theory, by Ryszard Engelking, North-Holland Mathematical Library, Vol. 19, North-Holland Publishing Company, Amsterdam and New York; Polish Scientific Publishers, Warsaw, 1978, x + 314 pp., $44.50.

Geometry lays claim to being the oldest mathematical discipline. The notion of dimension is fundamental to geometry, but was without adequate rigorous underpinnings until the twentieth century. The early work of dimension theorists culminated in *Dimension theory* by W. Hurewicz and H. Wallman in 1941. Here the intuitive concepts of dimension were given precise definition and a complete theory for finite-dimensional separable metric spaces was given in an elegant and succinct form. There were many areas which remained to be investigated. One could argue that there should exist a comparable theory for general metric spaces. Within a few years such a theory was mapped out. J. Nagata's book, *Modern dimension theory*, relates the essential features of this theory. The intervening years have given us only minor embellishments. Dimension theory for nonmetrizable spaces is at the present time in a very unsatisfactory state, but for a different reason than in the past. Today we know that a satisfactory theory does not exist. Even compact spaces have proven perverse. Only Lebesgue covering dimension has