

**PART IV**  
**CLASSES OF UNBOUNDED LINEAR OPERATORS**

One of the most important classes of operators is the class of unbounded operators. This includes differential operators which play a vital role in applications. In this part an introduction to the theory of unbounded operators is presented. We start with the study of their adjoints and conjugates, and then concentrate on certain types of ordinary and partial differential operators (Chapter XIV). In the next three chapters (XV-XVII) results proved earlier for bounded operators are extended to unbounded operators. The main topics are functional calculus, the spectral theorem, and the theory of Fredholm operators. The last chapter contains an introduction to the theory of strongly continuous semigroups with applications to the abstract Cauchy problem and linear transport theory.