This book, the third of a three-volume work, is the outgrowth of the authors' experience teaching calculus at Berkeley. It is concerned with multivariable calculus, and begins with the necessary material from analytic geometry. It goes on to cover partial differentiation, the gradient and its applications, multiple integration, and the theorems of Green, Gauss, and Stokes. Throughout the book, the authors motivate the study of calculus using its applications. Many solved problems are included, and extensive exercises are given at the end of each section. In addition, a separate student guide has been prepared.