ciple of Symmetry, Theory of Divisors, and its application to Factoring, and Applications of Horner's Division.

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A few of the exercises are chiefly supplementary to those proposed in the text-books, but the intelligent student will find that even these examples have not been selected in an aimless fashion; he will recognize that they are really expressions of certain laws; they are in fact proposed with a view to lead him to investigate these laws for himself as soon as he has sufficiently advanced in his course. Nos. 8, 9, 10, and 11 of Ex. 1 afford instances of such exercises.

Others of the questions proposed are preparatory or interpretation exercises. These might well have been omitted were it not that they are generally omitted from the text-books and are too often neglected by teachers. Practice in the interpretation of a new notation, and in expression by means of it, should always precede its use as a symbolism itself subject to operations. Nos. 23 to 36 of Ex. 3, and nearly the whole of Ex. 15, may serve for instances.

By far the greater number of the exercises is intended for practice in the methods exhibited in the solved examples. As many as possible of these have been selected for their intrinsic value. They have been gathered from the works of the great masters of analysis, and the student who proceeds to the higher branches of mathematics will meet again with these examples and exercises, and will find his progress aided by his familiarity with them, and will not have to interrupt his advanced studies to learn theorems and processes properly belonging to elementary Algebra. In making this selection, it has been found that the most widely useful transformations are, at the same time, those that best exhibit the methods of reduction here explained, so that they have thus a double advantage.

The present volume ends with an extensive collection of exercises in Determinants. These present under new forms and from a different point of view the greater number of the theorems proposed, and many of the general results obtained, in the earlier chapters, and to these they add many important propositions in other subjects; as,

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