SHORT METHOD OF MULTIPLICATION.

A VERY large number of excellent short methods are fully explained in "The New Arithmetic." The following method of multiplying does not appear in that excellent text-book, and will, we feel satisfied, be new to many of our readers.

Example 1.—Multiply 2043 by 427.

NOTE.—Note the multiplier; one part of it, 42, is a multiple of the remainder. Whenever this occurs the method explained below will apply.

$$2043$$
$$427 = 420 + 7 = (7 \times 60) + 7.$$
$$14301 = 2043 \times 7.$$
$$858060 = 2043 \times 420 = 14301 \times 60.$$
$$872361 \quad Product.$$

NOTE.—We first multiply by 7, then by 420, thus taking the number 2043 427 times. The contraction is made in multiplying by 420. We take its factors, 7 and 60; we have already multiplied by 7, so that all that remains to be done is to multiply 14301 by 60 and place it under. The sum of the two partial products gives the whole product.

Example 2.—Multiply 3142 by 972.

$$3142$$
$$972 = 900 + 72 = 900 + (9 \times 8).$$
$$2827800 = 3142 \times 900.$$
$$226224 = 3142 \times 72 = 28278 \times 8.$$
$$3054024 \quad Product.$$

Example 3.—Multiply 42013 by 14412.

$$42013$$
$$14412 = 14400 + 12 = (12 \times 1200) + 12.$$
$$504156 = 42013 \times 12.$$
$$604987200 = 42013 \times 14400 = 504156 \times 1200.$$
$$605491356 \quad Product.$$

EXERCISE.

1. 2013 × 927.
2. 1214 × 279.
3. 3135 × 728.
4. 2146 × 287.
5. 3210 × 189.
6. 21401 × 729.
7. 31252 × 14412.
8. 42001 × 70357.
9. 15421 × 81273.
10. 30012 × 94572.

SENTENCE-BUILDING.

FILL each blank of the following sentences with the correct pronoun:—

1. Every friend has —— faults.
2. A person's manners often show —— morals.
3. Let everybody act for ——.
4. The darling loves —— nurse.
5. The kitten chases —— tail.
6. The snake shows —— forked tongue.
7. Earth yields —— increase.
8. Let the wicked forsake —— way.
9. Every boy took —— books.
10. Everyone must judge of —— own feelings.

POSITION OF THE ADVERBS.

AMBIGUITY is often produced by the improper position of the adverbs. Care should be taken to place the adverb as near as possible to the word which it qualifies, and in such a position, either before or after, that it can easily be taken to qualify any other word.

The student is expected to criticise and correct the following sentences in regard to the position of the adverb:—

1. I only bring forward some things
2. He is considered generally insane.
3. I did not talk to him but to you.
4. The French nearly lost five hundred men.
5. I only ate one apple to-day.
6. The light, sandy soil only favors the fern.
7. I never expect to see Europe.
8. The productions mostly consist of corn and cotton.
9. Port wine is now only favored by two classes.
10. It was by hunting and fishing that the Indians chiefly subsisted.

NOTES ON NUMBERS.

WHAT is meant by $\frac{3}{5} \times \frac{1}{4}$? Is it possible to *multiply* by a fraction? Does not a fraction always *divide*?

Any number is exactly divisible by 2 if 2 measures evenly its last digits. The same rule holds for five.

Any number is exactly divisible by 4 if 4 measures the number formed by its last two digits. The same rule holds for 25.

Is a unit necessarily a single thing? Give illustrations. Is a fraction a unit, a part of a unit, or several units?

The product of the highest common factor and least common multiple of two numbers is equal to the product of the two numbers. Why?

Any number is exactly divisible by 8 if 8 measures the number formed by its last three digits. The same rule holds for 125.

Any number is exactly divisible by 3 or 9 if 3 or 9 measures the sum of its digits.

Any number consisting of three equal digits, as 111, 222, 333, etc., is divisible by 37, and the quotient is the sum of the digits. Explain this.

Any number consisting of three digits followed by the same three in the same order is divisible by 7, 11 and 13; or 1001; and the quotient is the number formed by the three digits.