

MULTIPLYING LARGE NUMBERS

FACT 1: Arrange the digits of the numbers in columns by their place values and then multiply using the distribution property.

Multiply 547 by 213

- (a) There are as many partial products as there are digits in the multiplier.
- (b) Write the partial products, from right to left, starting from the column of the digit of the multiplier.
- (c) Omit trailing zeroes of the partial product.

$$\begin{array}{r}
 \\
 \\
 \\
 \hline
 1 \\
 5 \\
 1 \\
 \hline
 1
 \end{array}$$

Do this multiplication on paper and then check out the product **116,511** on a calculator.

Multiply 526 by 602

- (a) When there is a '0' digit in the multiplier, its partial product is zero, and it may be omitted.
- (b) Keep in mind that the row for the next partial product should line up with the column of the digit in the second factor.

$$\begin{array}{r}
 \\
 \\
 \\
 \hline
 3 \\
 \\
 1 \\
 \hline
 3
 \end{array}$$

Do this multiplication on paper and then check out the product **316,652** on a calculator.

FACT 2: We may multiply in two different ways with the same factors to verify the product. The product should be the same in both cases.

Multiply 21 by 3005

$$\begin{array}{r}
 \\
 \\
 \\
 \hline
 6 \\
 1 \\
 \hline
 6
 \end{array}$$

$$\begin{array}{r}
 \\
 \\
 \\
 \hline
 3 \\
 6 \\
 \hline
 6
 \end{array}$$

1. Multiply the following numbers by columns. Verify your answers on a calculator.

- | | | |
|---------------|-----------------|-----------------|
| (a) 325 x 221 | (f) 1700 x 400 | (k) 121 x 989 |
| (b) 496 x 143 | (g) 2370 x 2000 | (l) 8530 x 778 |
| (c) 333 x 333 | (h) 3059 x 206 | (m) 249 x 117 |
| (d) 574 x 203 | (i) 4444 x 2222 | (n) 3000 x 3000 |
| (e) 408 x 307 | (j) 5333 x 1071 | (o) 2200 x 3030 |

End of Lesson