Multiply 3-Digit and 4-Digit Numbers with Regrouping

When you multiply 3-digit and 4-digit numbers, you may need to regroup.

Estimate. Then find the product.

$$\begin{array}{r} \$1,324 \\ \times 7 \end{array}$$

Step 1 Estimate the product.　　　$1,324 rounds to $1,000; $1,000 × 7 = **$7,000.**

Step 2 Multiply the 4 ones by 7.
Regroup the 28 ones as 2 tens 8 ones.

$$\begin{array}{r} \overset{2}{} \\ \$1,324 \\ \times 7 \\ \hline 8 \end{array}$$

Step 3 Multiply the 2 tens by 7.
Add the regrouped tens.
Regroup the 16 tens as 1 hundred 6 tens.

$$\begin{array}{r} \overset{1\,2}{} \\ \$1,324 \\ \times 7 \\ \hline 68 \end{array}$$

Step 4 Multiply the 3 hundreds by 7.
Add the regrouped hundred.
Regroup the 22 hundreds as 2 thousands 2 hundreds.

$$\begin{array}{r} \overset{2\,1\,2}{} \\ \$1,324 \\ \times 7 \\ \hline 268 \end{array}$$

Step 5 Multiply the 1 thousand by 7.
Add the regrouped thousands.

$$\begin{array}{r} \overset{2\,1\,2}{} \\ \$1,324 \\ \times 7 \\ \hline \$9,268 \end{array}$$

So, 7 × $1,324 = $9,268.
Since $9,268 is close to the estimate of $7,000, the answer is **reasonable**.

Estimate. Then find the product.

1. Estimate: _____   **2.** Estimate: _____   **3.** Estimate: _____   **4.** Estimate: _____

$$\begin{array}{r} 3,184 \\ \times 2 \end{array} \qquad \begin{array}{r} \$828 \\ \times 4 \end{array} \qquad \begin{array}{r} 2,637 \\ \times 5 \end{array} \qquad \begin{array}{r} \$6,900 \\ \times 7 \end{array}$$