

You can estimate a quotient to see if your answer is reasonable by following these steps:

Sample

- Round off the divisor and the dividend.
- Divide the rounded-off numbers in your mind.
- Compare your estimate to the actual answer.

$$\begin{array}{r}
 \text{Actual} \\
 \mathbf{x\ 223\ R5} \\
 38 \overline{)8,479} \\
 \underline{-76\downarrow} \\
 87\downarrow \\
 \underline{-76\downarrow} \\
 119 \\
 \underline{-114} \\
 5
 \end{array}$$

$$\begin{array}{r}
 \text{Estimate} \\
 \mathbf{x\ 200} \\
 40 \overline{)8,000} \\
 \underline{-80} \\
 0
 \end{array}$$

Directions: Estimate a quotient for each problem below. Then do the division to get the exact answer. Use the information above and on page 25 to help you solve these problems. The first one is done for you.

Actual**Estimate****Actual****Estimate**

1.

$$\begin{array}{r}
 \mathbf{x19\ R9} \\
 23 \overline{)446} \\
 \underline{-23} \\
 216 \\
 \underline{-207} \\
 9
 \end{array}$$

$$\begin{array}{r}
 \mathbf{x20} \\
 20 \overline{)400} \\
 \underline{-40} \\
 0
 \end{array}$$

4.

$$\begin{array}{r}
 \mathbf{x\ R} \\
 27 \overline{)939}
 \end{array}$$

2.

$$\begin{array}{r}
 \mathbf{x\ R} \\
 39 \overline{)841}
 \end{array}$$

5.

$$\begin{array}{r}
 \mathbf{x\ R} \\
 41 \overline{)841}
 \end{array}$$

3.

$$\begin{array}{r}
 \mathbf{x\ R} \\
 28 \overline{)625}
 \end{array}$$

6.

$$\begin{array}{r}
 \mathbf{x\ R} \\
 29 \overline{)6459}
 \end{array}$$

..... Checking Division Problems with Multiplication

You can use multiplication to check division this way:

$ \begin{array}{r} \text{quotient} \\ \downarrow \\ \mathbf{x\ 302\ R3} \\ \text{divisor } \rightarrow \mathbf{25} \overline{)7,553} \leftarrow \text{dividend} \\ \underline{-75} \downarrow\downarrow \\ \mathbf{53} \\ \underline{-50} \\ \mathbf{3} \leftarrow \text{remainder} \end{array} $	$ \begin{array}{r} \mathbf{302} \text{ quotient} \\ \mathbf{x\ 25} \text{ divisor} \\ \hline \mathbf{1,510} \\ \mathbf{+ 6,040} \\ \hline \mathbf{7,550} \\ \mathbf{+ 3} \text{ remainder} \\ \hline \mathbf{7,553} \text{ dividend} \end{array} $
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Check your division by multiplying the quotient and divisor ($302 \times 25 = 7,550$) and then adding the remainder to the product ($7,550 + 3$).

Directions: Use the information on page 25 and in the sample above to help you solve these problems and check the answers. The first one is started for you.

Check

Check

1.

$$\begin{array}{r}
 \mathbf{x19\ R9} \\
 23 \overline{)446} \\
 \underline{23} \\
 216 \\
 \underline{207} \\
 9
 \end{array}$$

4.

$$\begin{array}{r}
 \mathbf{x} \quad \mathbf{R} \\
 29 \overline{)913}
 \end{array}$$

2.

$$\begin{array}{r}
 \mathbf{x} \quad \mathbf{R} \\
 39 \overline{)887}
 \end{array}$$

5.

$$\begin{array}{r}
 \mathbf{x} \quad \mathbf{R} \\
 33 \overline{)784}
 \end{array}$$

3.

$$\begin{array}{r}
 \mathbf{x} \quad \mathbf{R} \\
 21 \overline{)765}
 \end{array}$$

6.

$$\begin{array}{r}
 \mathbf{x} \quad \mathbf{R} \\
 31 \overline{)4816}
 \end{array}$$

••••• Checking More Division Problems
with Multiplication

Directions: Solve the long division problems below. Use the information on page 25 to help you solve each problem. Check your division by using multiplication for each problem.

1.

$$26 \overline{) 7915}$$

2.

$$33 \overline{) 6934}$$

3.

$$16 \overline{) 4965}$$

4.

$$92 \overline{) 9536}$$

5.

$$17 \overline{) 1428}$$

6.

$$53 \overline{) 9352}$$

7.

$$88 \overline{) 9734}$$

8.

$$43 \overline{) 9887}$$

9.

$$26 \overline{) 5644}$$

10.

$$76 \overline{) 86,734}$$

11.

$$65 \overline{) 13,120}$$

12.

$$14 \overline{) 13,962}$$