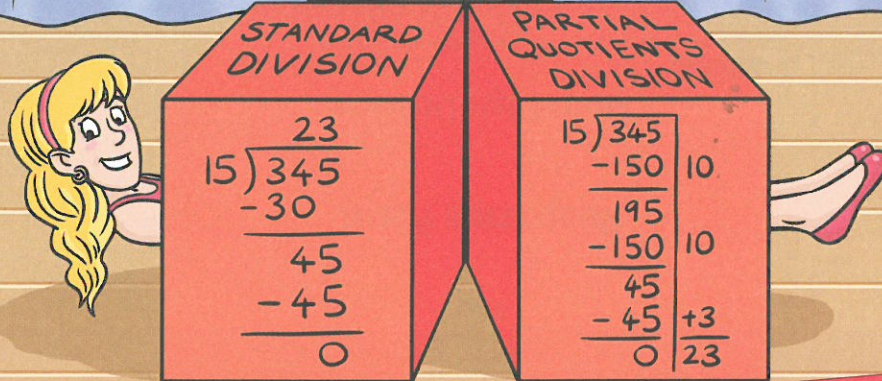


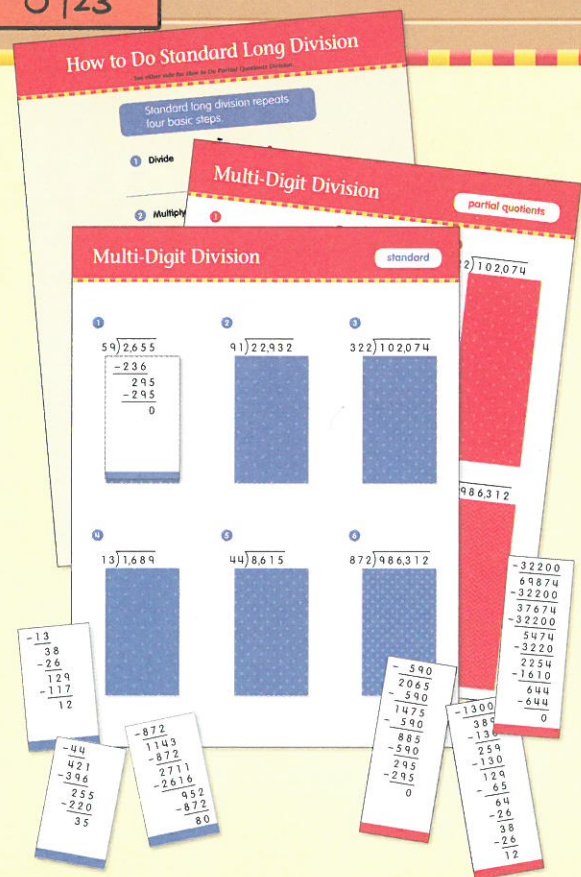
Multi-Digit Division

Skill: Build fluency dividing multi-digit numbers

You can solve division problems two different ways.



- 1** Lay out the mats and sort the cards by size.
- 2** Use the small cards with the mat for **standard** division. Use the large cards with the mat for **partial quotients** division.
- 3** Review the included step-by-step instructions for doing division.
- 4** Look at each division problem on the mats and find the card that shows the steps to solve the problem.
- 5** Place the card on the mat under the problem.
- 6** Complete the response form.



How to Do Standard Long Division

See other side for *How to Do Partial Quotients Division*.

Standard long division repeats four basic steps.

1 Divide

$$\begin{array}{r} 3 \\ 123 \overline{)4,567} \end{array}$$

2 Multiply

$$\begin{array}{r} 3 \\ 123 \overline{)4,567} \\ 123 \times 3 = 369 \qquad 369 \end{array}$$

3 Subtract

$$\begin{array}{r} 3 \\ 123 \overline{)4,567} \\ -369 \\ \hline 87 \end{array}$$

4 Bring down

$$\begin{array}{r} 3 \\ 123 \overline{)4,567} \\ -369 \downarrow \\ \hline 877 \end{array}$$

Repeat the steps until there is no remainder or until the remainder is smaller than the divisor.

$$\begin{array}{r} \text{quotient} \\ \boxed{37} \text{ R} \boxed{16} \\ 123 \overline{)4,567} \\ -369 \\ \hline 877 \\ -861 \\ \hline 16 \end{array}$$

How to Do Partial Quotients Division

See other side for *How to Do Standard Long Division*.

Partial quotients division finds a partial answer at each step. The partial answers are added together to find the final quotient.

- 1** Use mental math to multiply the divisor by a number (factor) that will give you the biggest product possible but still be less than the dividend. (Using multiples of 10 or doubling the divisor usually works well.)

$$123 \overline{)4,567}$$

$$\begin{array}{r} 123 \\ \times 10 \\ \hline 1,230 \end{array}$$

- 2** List the factors in a column next to the division. (You will add up the factors later.)

$$123 \overline{)4,567} \quad \begin{array}{l} 10 \end{array}$$

- 3** Each time you multiply, write the product under the dividend and subtract.

$$123 \overline{)4,567} \quad \begin{array}{l} 10 \end{array}$$

$$\begin{array}{r} 4,567 \\ -1,230 \\ \hline 3,337 \end{array}$$

- 4** Repeat steps 1, 2, and 3 until there is no remainder or until the remainder is smaller than the divisor.

$$123 \overline{)4,567} \quad \begin{array}{l} 10 \\ 20 \\ 5 \\ 2 \end{array}$$

$$\begin{array}{r} 4,567 \\ -1,230 \\ \hline 3,337 \\ -2,460 \\ \hline 877 \\ -615 \\ \hline 262 \\ -246 \\ \hline 16 \end{array}$$

- 5** Add the list of factors (see step 2) to get the final quotient.

$$123 \overline{)4,567} \quad \begin{array}{l} 10 \\ 20 \\ 5 \\ 2 \end{array}$$

$$\begin{array}{r} 4,567 \\ -1,230 \\ \hline 3,337 \\ -2,460 \\ \hline 877 \\ -615 \\ \hline 262 \\ -246 \\ \hline 16 \end{array} \quad \begin{array}{l} 10 \\ 20 \\ 5 \\ 2 \\ \hline 37 \end{array}$$

quotient

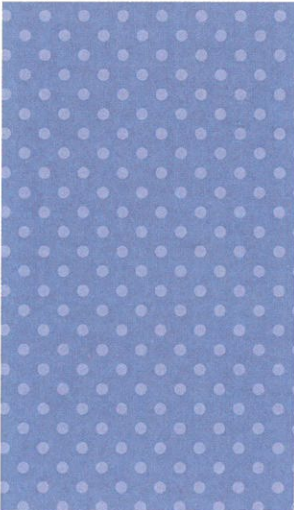
37 R16

Multi-Digit Division

standard

1

$$59 \overline{) 2,655}$$



2

$$91 \overline{) 22,932}$$



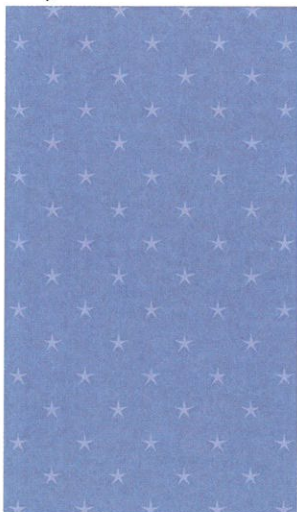
3

$$322 \overline{) 102,074}$$



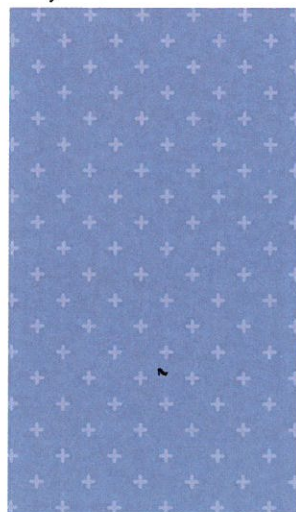
4

$$13 \overline{) 1,689}$$



5

$$44 \overline{) 8,615}$$



6

$$872 \overline{) 986,312}$$



Multi-Digit Division

partial quotients

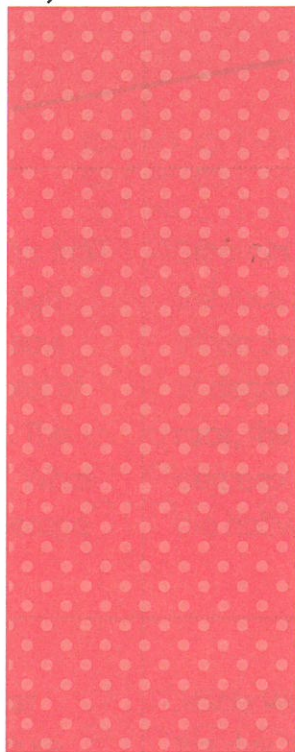
1

$$59 \overline{) 2,655}$$



2

$$91 \overline{) 22,932}$$



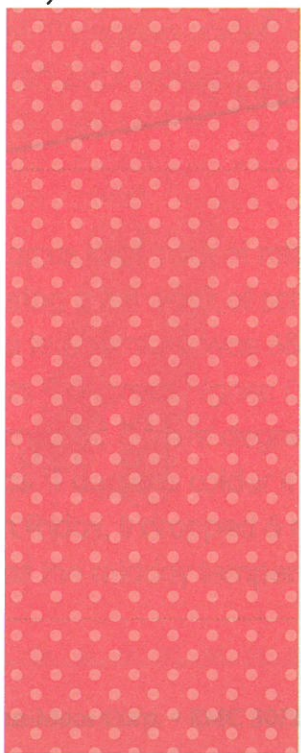
3

$$322 \overline{) 102,074}$$



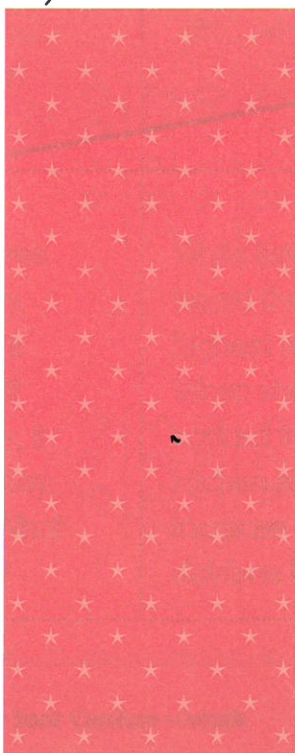
4

$$13 \overline{) 1,689}$$



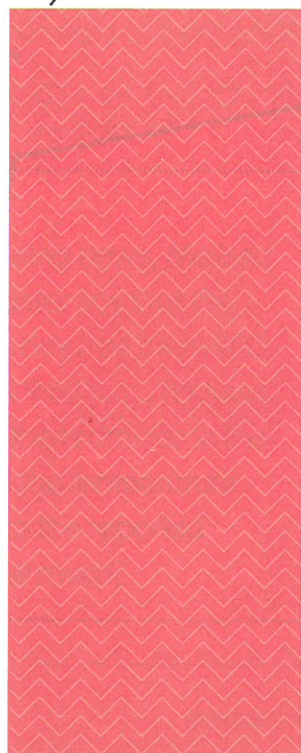
5

$$44 \overline{) 8,615}$$



6

$$872 \overline{) 986,312}$$



$\begin{array}{r} -236 \\ \underline{295} \\ -295 \\ \hline 0 \end{array}$	$\begin{array}{r} -182 \\ \underline{473} \\ -455 \\ \hline 182 \\ -182 \\ \hline 0 \end{array}$	$\begin{array}{r} -966 \\ \underline{547} \\ -322 \\ \hline 2254 \\ -2254 \\ \hline 0 \end{array}$	$\begin{array}{r} -13 \\ \underline{38} \\ -26 \\ \hline 129 \\ -117 \\ \hline 12 \end{array}$	$\begin{array}{r} -44 \\ \underline{421} \\ -396 \\ \hline 255 \\ -220 \\ \hline 35 \end{array}$	$\begin{array}{r} -872 \\ \underline{1143} \\ -872 \\ \hline 2711 \\ -2616 \\ \hline 952 \\ -872 \\ \hline 80 \end{array}$
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$\begin{array}{r} -590 \\ \underline{2065} \\ -590 \\ \hline 1475 \\ -590 \\ \hline 885 \\ -590 \\ \hline 295 \\ -295 \\ \hline 0 \end{array}$	$\begin{array}{r} -9100 \\ \underline{13832} \\ -9100 \\ \hline 4732 \\ -1820 \\ \hline 2912 \\ -1820 \\ \hline 1092 \\ -910 \\ \hline 182 \\ -182 \\ \hline 0 \end{array}$	$\begin{array}{r} -32200 \\ \underline{69874} \\ -32200 \\ \hline 37674 \\ -32200 \\ \hline 5474 \\ -3220 \\ \hline 2254 \\ -1610 \\ \hline 644 \\ -644 \\ \hline 0 \end{array}$	$\begin{array}{r} -1300 \\ \underline{389} \\ -130 \\ \hline 259 \\ -130 \\ \hline 129 \\ -65 \\ \hline 64 \\ -26 \\ \hline 38 \\ -26 \\ \hline 12 \end{array}$	$\begin{array}{r} -4400 \\ \underline{4215} \\ -2200 \\ \hline 2015 \\ -1100 \\ \hline 915 \\ -440 \\ \hline 475 \\ -440 \\ \hline 35 \end{array}$	$\begin{array}{r} -872000 \\ \underline{114312} \\ -87200 \\ \hline 27112 \\ -8720 \\ \hline 18392 \\ -8720 \\ \hline 9672 \\ -8720 \\ \hline 952 \\ -872 \\ \hline 80 \end{array}$
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