Long Division

You may be able to do some or all of this math mentally and do not need to write it out.

$2\overline{)\ 70}$	$\begin{array}{r} 3 \\ 2\overline{)\ 7\ 0} \\ 6 \end{array}$	Two goes into seven 3 times. Put the 3 above the seven. Now multiply 2 x 3 and place it under the 7.
	$\begin{array}{r} 3 \\ 2\overline{)\ 7\ 0} \\ -\ 6\downarrow \\ \hline 1\ 0 \end{array}$	Subtract the two numbers. Bring down the next number to create the next dividend.
Answer: 35	$\begin{array}{r} 3\ 5 \\ 2\overline{)\ 7\ 0} \\ -\ 6\downarrow \\ \hline 1\ 0 \\ -\ 1\ 0 \\ \hline 0 \end{array}$	Two goes into ten 5 times. Put the 5 above the zero. Now multiply 2 x 5 and place it under the 10. Subtract the two numbers to find the remainder. There is no remainder.

$3\overline{)\ 93}$	$\begin{array}{r} 3 \\ 3\overline{)\ 9\ 3} \\ 9 \end{array}$	Three goes into nine 3 times. Put the 3 above the nine. Now multiply 3 x 3 and place it under the 9.
	$\begin{array}{r} 3 \\ 3\overline{)\ 9\ 3} \\ -\ 9\downarrow \\ \hline 0\ 3 \end{array}$	Subtract the two numbers. Bring down the next number to create the next dividend.
Answer: 31	$\begin{array}{r} 3\ 1 \\ 3\overline{)\ 9\ 3} \\ -\ 9\downarrow \\ \hline 0\ 3 \\ -\ 0\ 3 \\ \hline 0 \end{array}$	Three goes into three 1 time. Put the 1 above the three. Now multiply 3 x 1 and place it under the 3. Subtract the two numbers to find the remainder. There is no remainder.

No Remainders

1. $2\overline{)64}$
2. $2\overline{)88}$
3. $2\overline{)80}$
4. $3\overline{)21}$
5. $3\overline{)63}$
6. $2\overline{)36}$
7. $3\overline{)48}$
8. $2\overline{)16}$
9. $3\overline{)42}$
10. $2\overline{)14}$
11. $3\overline{)6}$
12. $3\overline{)54}$
13. $3\overline{)87}$
14. $2\overline{)70}$
15. $2\overline{)56}$
16. $3\overline{)39}$
17. $3\overline{)45}$
18. $3\overline{)63}$

Long Division - Higher Dividends

You may be able to do some or all of this math mentally and do not need to write it out.

$4\overline{)\,173}$

$$\begin{array}{r} 4 \\ 4\overline{)\,1\;7\;3} \\ -\;1\;6\;\downarrow \\ \hline 1\;3 \end{array}$$

Since 1 is too small to divide by 4, use the next digit and divide 17 by 4.

$$\begin{array}{r} 4\;3 \\ 4\overline{)\,1\;7\;3} \\ -\;1\;6\;\downarrow \\ \hline 1\;3 \\ -\;1\;2 \\ \hline 1 \end{array}$$

Divide 13 by 4.

Answer: 43 R 1

$$\begin{array}{r} 4\;3\text{ R }1 \\ 4\overline{)\,1\;7\;3} \end{array}$$

$8\overline{)\,987}$

$$\begin{array}{r} 1 \\ 8\overline{)\,9\;8\;7} \\ -\;8\;\downarrow \\ \hline 1\;8 \end{array}$$

9 ÷ 8.

$$\begin{array}{r} 1\;2 \\ 8\overline{)\,9\;8\;7} \\ -\;8\;\downarrow \\ \hline 1\;8 \\ -\;1\;6\;\downarrow \\ \hline 2\;7 \end{array}$$

18 ÷ 8.

$$\begin{array}{r} 1\;2\;3\text{ R }3 \\ 8\overline{)\,9\;8\;7} \\ -\;8\;\downarrow \\ \hline 1\;8 \\ -\;1\;6\;\downarrow \\ \hline 2\;7 \\ -\;2\;4 \\ \hline 3 \end{array}$$

27 ÷ 8.

Answer: 123 R 3

Three and Four-Digit Dividends

① $2\overline{)153}$

② $2\overline{)203}$

③ $5\overline{)774}$

④ $9\overline{)954}$

⑤ $9\overline{)967}$

⑥ $5\overline{)502}$

⑦ $8\overline{)805}$

⑧ $5\overline{)512}$

⑨ $3\overline{)425}$

⑩ $6\overline{)198}$

⑪ $6\overline{)572}$

⑫ $8\overline{)413}$

More Estimation

① $23\overline{)69}$

② $21\overline{)25}$

③ $23\overline{)90}$

④ $21\overline{)83}$

⑤ $22\overline{)82}$

⑥ $23\overline{)94}$

⑦ $21\overline{)54}$

⑧ $21\overline{)60}$

⑨ $21\overline{)74}$

⑩ $23\overline{)51}$

⑪ $22\overline{)31}$

⑫ $22\overline{)77}$

Long Division - Double Digit Answers (Quotients)

$33\overline{)457}$ Start with 45 ÷ 33.

$$\begin{array}{r} 1 \\ 33\overline{)457} \\ -\,33\downarrow \\ \hline 12 \end{array}$$ --- 33 x 1

$$\begin{array}{r} 13\text{ R }28 \\ 33\overline{)457} \\ -\,33\downarrow \\ \hline 127 \\ -\,99 \\ \hline 28 \end{array}$$ --- 33 x 3

As long as the remainder is smaller than the divisor (33), the answer is correct.

Answer: 13 R 28

$21\overline{)903}$ Start with 90 ÷ 21.

$$\begin{array}{r} 4 \\ 21\overline{)903} \\ -\,84\downarrow \\ \hline 6 \end{array}$$ --- 21 x 4

$$\begin{array}{r} 43 \\ 21\overline{)903} \\ -\,84\downarrow \\ \hline 63 \\ -\,63 \\ \hline 0 \end{array}$$ --- 21 x 3

As long as the remainder is smaller than the divisor (21), the answer is correct.

Answer: 43

Double-Digit Quotients

① $43\overline{)880}$

② $42\overline{)882}$

③ $23\overline{)617}$

④ $42\overline{)350}$

⑤ $33\overline{)825}$

⑥ $21\overline{)289}$

⑦ $42\overline{)840}$

⑧ $21\overline{)645}$

⑨ $22\overline{)528}$

Long Division - Mastery

$$\begin{array}{r|l} 56 & 3478 \end{array}$$

Start with 347 ÷ 56.

This is similar to 300 ÷ 50.

$$\begin{array}{r} \ 6 \\ 56\overline{)\ 3478} \\ -\ 336\downarrow \\ \hline 11 \end{array}$$

--- 56 x 6

$$\begin{array}{r} \ 6 \\ 56\overline{)\ 3478} \\ -\ 336\downarrow \\ \hline 118 \end{array}$$

--- 56 x 6

Now divide 118 by 56.

This is similar to 100 ÷ 50.

$$\begin{array}{r} \ 62\ \text{R}\ 6 \\ 56\overline{)\ 3478} \\ -\ 336\downarrow \\ \hline 118 \\ -\ 112 \\ \hline 6 \end{array}$$

--- 56 x 6

--- 56 x 2

Answer: 62 R 6

Mastery

① $21\overline{)2,198}$

② $31\overline{)2,277}$

③ $31\overline{)4,273}$

④ $21\overline{)3,642}$

⑤ $33\overline{)2,489}$

⑥ $23\overline{)2,043}$

⑦ $32\overline{)1312}$

⑧ $22\overline{)4,573}$

⑨ $21\overline{)3,608}$