



Dividing Decimals

Vocabulary of a division problem:

Divisor: the number being used to divide into another number.

Dividend: the number being divided by the divisor.

Quotient: the answer.

Dividing a decimal number by a whole number

Example: $5 \overline{)1.23}$

1. Begin with the divisor, 5.

Notice that the first part of the dividend is "1".

$$5 \overline{)1.23}$$

Does 5 go into 1?

No.

Write 0 above the division bar just above the 1.

Copy the decimal point directly above the division bar in line with its original location.

$$0. \\ 5 \overline{)1.23}$$

2. Multiply the quotient and the divisor.

In other words, multiply 0 and 5
and write the result under the "1".

$$\begin{array}{r} 0. \\ 5 \overline{) 1.23} \\ \underline{0} \end{array}$$

3. Subtract 0 from 1 .

Write the result under "1" and bring-down
the next part of the dividend.

Bring-down the "2".

$$\begin{array}{r} 0. \\ 5 \overline{) 1.23} \\ \underline{0} \\ 12 \end{array}$$

4. Does the divisor go into 12?

In other words, what is 12 divided by 5 ?

Since $(5) * (2)$ is 10, the answer is 2 with a
remainder of 2.

$$\begin{array}{r} 0.2 \\ 5 \overline{) 1.23} \\ \underline{0} \\ 12 \end{array}$$

Above the division bar, write the "2"
directly above the 2 in the dividend.

5. Multiply the new part of the quotient
and the divisor.

So: multiply "2" and "5".

Write the result, "10", under the 12.

$$\begin{array}{r} 0.2 \\ 5 \overline{) 1.23} \\ \underline{0} \\ 12 \\ \underline{10} \end{array}$$

6. Subtract "10" from "12".

Write the result "2" under the subtraction
line, and bring-down the next part of the
dividend.

Bring-down the "3".

$$\begin{array}{r} 0.2 \\ 5 \overline{)1.23} \\ \underline{0} \\ 12 \\ \underline{10} \\ 23 \end{array}$$

7. We repeat the process.

Does the divisor, 5, go into 23?

In other words, what is 23 divided by 5 ?

$$\begin{array}{r} 0.24 \\ 5 \overline{)1.23} \\ \underline{0} \\ 12 \\ \underline{10} \\ 23 \end{array}$$

Since $(5) * (4)$ is 20, the answer is 4 with a remainder of 3.

Above the division bar, write the "4" directly above the 3 in the dividend.

8. Multiply the new part of the quotient and the divisor.

$$\begin{array}{r} 0.24 \\ 5 \overline{)1.23} \\ \underline{0} \\ 12 \\ \underline{10} \\ 23 \\ \underline{20} \end{array}$$

So: multiply "4" and "5".

Write the result, "20", under the 23.

9. Subtract "20" from "23".

Write the result "3" under the subtraction line.

Since there are no other parts of the dividend, we must place a "0" to the right of the "3".

This serves as a "place holder".

$$\begin{array}{r} 0.24 \\ 5 \overline{)1.230} \\ \underline{0} \\ 12 \\ \underline{10} \\ 23 \\ \underline{20} \\ 3 \end{array}$$

10. Bring-down the "0" and place it next to the "3" under the last subtraction bar.

$$\begin{array}{r} 0.24 \\ 5 \overline{)1.230} \\ \underline{0} \\ 12 \\ \underline{10} \\ 23 \\ \underline{20} \\ 30 \end{array}$$

11. We repeat the process again and this is our last division!

Does the divisor, 5, go into 30?

Yes.

"30" divided by "5" is 6.

Above the division bar, write the "6" directly above the 0.

Then multiply the new part of the quotient and the divisor.

Multiply "6" and "5" to get "30"

Place "30" under "30".

$$\begin{array}{r} 0.246 \\ 5 \overline{)1.230} \\ \underline{0} \\ 12 \\ \underline{10} \\ 23 \\ \underline{20} \\ 30 \\ \underline{30} \end{array}$$

12. Subtract "30" from "30" to get "0".
Since there is no remainder, we are done.

$$\begin{array}{r} 0.246 \\ 5 \overline{)1.230} \end{array}$$

1.23 divided by 5 is 0.246