Division of a Decimal by another Decimal

When we divide decimals, we have to convert the divisor to a whole number by moving the decimal point to the right. Then, we carry the dividend's decimal point up to the same number of places to the right and divide the resultant numbers in the usual way as we perform in regular long division.

The following steps are to be followed while dividing a decimal number by a decimal number.

1. Form a fraction with the decimal number to be divided or the dividend as the numerator and the divisor decimal number as the denominator.
2. Multiply both the terms of the fraction formed in the previous step by 10 or 100 or 1000, so that the decimal point in the denominator is removed, thus dividing the numbers.

Let us understand with an example:

Example: Divide 5.944 by 0.8.

Solution: $5.944 \div 0.8 = (5.944 \times 10) \div (0.8 \times 10)$

Move the decimal point 1place to the right in both the dividend and the divisor by multiplying each by 10.

Now, since the divisor is converted into a whole number, proceed with the division as done in the previous example.

$$
\begin{array}{r|l}
8 & 7.43 \leftarrow \\
\hline
59.44 & \text{The decimal points of the quotient and the dividend are aligned.} \\
\uparrow\text{—————} & 59 = 7 \times 8 + 3 \\
-56 & \\
\hline
34 \leftarrow & 3 + 4 = 34 \\
-32 & 34 = 4 \times 8 + 2 \\
\hline
24 \leftarrow & 2 + 4 = 24 \\
-24 & 24 = 3 \times 8 \\
\hline
0 &
\end{array}
$$

Hence, 5.944 ÷ 0.8 = 7.435.944 ÷ 0.8 = 7.43