

DECIMALS

'Division of Decimals - quotient as mixed number'

We have to be very careful while dividing a decimal number by a whole number. The following example will show you a step by step procedure to carry out the operation.

Example: DIVIDE!

Step:1

$$\begin{array}{r} 4 \\ 6 \overline{) 24.72} \\ \underline{- 24} \\ 0 \end{array}$$



We'll start division as we do for whole numbers. $6 \times 4 = 24$, so we'll write 4 in the quotient area. Since a decimal point comes after 24, we'll put a decimal point after 4 in the quotient as then we'll proceed to the next number which is 7.

Step:2

$$\begin{array}{r} 4.1 \\ 6 \overline{) 24.72} \\ \underline{24} \quad | \\ 7 \\ \underline{- 6} \\ 1 \end{array}$$



Now, $6 \times 1 = 6$, and $6 < 7$, so we'll write 1 in the quotient area and 6 under 7. Next, we'll carry out subtraction i.e. $7 - 6 = 1$.

Step:3

$$\begin{array}{r} 4.12 \\ 6 \overline{) 24.72} \\ \underline{24} \quad | \\ 7 \quad | \\ \underline{- 6} \quad | \\ 12 \\ \underline{- 12} \\ 0 \end{array}$$



Now, since $1 < 6$ we'll bring down 2 with 1. Now $6 \times 2 = 12$, we'll write 2 in the quotient area and 12 under 12. Next, we'll carry out subtraction i.e. $12 - 12 = 0$. And we are **done!**

$$24.72 \div 6 = 4.12$$

Example: DIVIDE!

Step:1

$$\begin{array}{r} 0.6 \\ 5 \overline{) 3.465} \\ \underline{-30} \\ 4 \end{array}$$



We'll start dividing from the first digit i.e. 3. Since $3 < 5$, so we'll take 4 and divide 34 by 5. $5 \times 6 = 30$ and $30 < 34$, so we'll write 6 in the quotient area. Since we took a digit after decimal point to start the procedure, we'll put the decimal point first in the quotient area before 6. Next carry out subtraction; $34 - 30 = 4$

Step:2

$$\begin{array}{r} 0.69 \\ 5 \overline{) 3.465} \\ \underline{30} \quad | \\ 46 \\ \underline{-45} \\ 1 \end{array}$$



Now $4 < 5$ so we'll bring down 6 to make 46. $5 \times 9 = 45$ and $45 < 46$, so we'll write 9 in the quotient & 45 under 46. Next comes subtraction; $46 - 45 = 1$.

Step:3

$$\begin{array}{r} 0.693 \\ 5 \overline{) 3.465} \\ \underline{30} \quad | \\ 46 \quad | \\ \underline{-45} \quad | \\ 15 \\ \underline{-15} \\ 0 \end{array}$$



Now, since $1 < 5$ we'll bring down 5 with 1. $5 \times 3 = 15$, we'll write 3 in the quotient area and 15 under 15. Next, we'll carry out subtraction i.e. $15 - 15 = 0$. And we are **done!**

$$\boxed{3.465 \div 5 = 0.693}$$