

Decimal Review

Adding and subtracting decimals

To add or subtract decimals, align the decimal points

Example: $2.36 - 0.193 = 2.360$

$$\begin{array}{r} 2.360 \\ - 0.193 \\ \hline 2.167 \end{array}$$

Multiplying decimals

Multiply the decimals without paying attention to decimal point placement.

Count how many decimal places are in the decimals multiplied.

In the answer, place the decimal point to the left of the total number of places counted.

Example: $72.5 \times 3.003 = 72.5$

$$\begin{array}{r} 72.5 \\ \times 3.003 \\ \hline 2175 \\ 000 \\ 000 \\ 2175 \\ \hline 217.7175 \end{array}$$

1st number has 1 decimal place, 2nd number has 3 decimal places → the answer will have 4 decimal places

Dividing decimals

123 divided by 4.5 can be written as

$$123 \div 4.5 \quad \frac{123}{4.5} \quad 4.5 \overline{)123}$$

dividend \div divisor = quotient

$$\begin{array}{r} \text{quotient} \\ \text{divisor} \overline{) \text{dividend}} \end{array}$$

To divide decimals

Convert the number you are dividing by to a whole number by moving the decimal point of both numbers to the right.

Put the decimal point in the answer directly above the decimal point in the dividend

Example: $84 \div 3.1 =$

$$3.1 \overline{)84}$$

Move the decimal point of both numbers to the right to get a whole number in the divisor.

$$31 \overline{)840.}$$

Decide how many times the divisor goes into the first number of the dividend. If it is zero times, place a zero in the quotient and use next digit in the dividend. (Zero in front of the number can be omitted.)
In this example we take **84** and see how many times **31** goes into **84**.

$$31 \times 2 = 62$$

$\begin{array}{r} 2 \\ 31 \overline{)840.} \end{array}$	The whole number result 2 is placed above the number in the dividend.	
$\begin{array}{r} 2 \\ 31 \overline{)840.} \\ \underline{62} \end{array}$	Multiply the 2 in the quotient by the divisor 31 and place the result below the number in the dividend.	
$\begin{array}{r} 2 \\ 31 \overline{)840.} \\ \underline{62} \\ 22 \end{array}$	Subtract the bottom number 62 from the top number 84 .	
$\begin{array}{r} 2 \\ 31 \overline{)840.} \\ \underline{62\downarrow} \\ 220 \end{array}$	Bring down the next digit which is 0 .	
$\begin{array}{r} 2 \\ 31 \overline{)840.} \\ \underline{62\downarrow} \\ 220 \end{array}$	Bring down the next digit which is 0 .	
$\begin{array}{r} 27 \\ 31 \overline{)840.} \\ \underline{62\downarrow} \\ 220 \\ \underline{217} \\ 3 \end{array}$	Divide the number 220 by the divisor 31 . Place the whole number in the quotient. Multiply the divisor by this whole number and place the result below 220 . Subtract.	$31 \times 7 = 217$
$\begin{array}{r} 27.0 \\ 31 \overline{)840.} \\ \underline{62\downarrow} \\ 220 \\ \underline{217\downarrow} \\ 30 \end{array}$	Place a decimal directly above the decimal point in the dividend. Bring the next digit down. 31 goes into 30 zero times. Place a 0 in a quotient.	
$\begin{array}{r} 27.09 \\ 31 \overline{)840.} \\ \underline{62\downarrow} \\ 220 \\ \underline{217\downarrow} \\ 300 \end{array}$	Bring down next digit. Divide 300 by 31 . Get a 9 . Place it in a quotient. Continue this process (bring down, divide, multiply, subtract, etc.) until we get as many decimal places as needed.	$31 \times 9 = 279$

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Answer: $84 \div 3.1 \approx 27.1$

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