

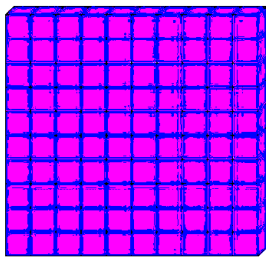
Multiplication: Decimal point moves to the right

0.8562×1	0.8562×10^0	$= 0.8562$
0.8562×10	0.8562×10^1	$= 8.562$
0.8562×100	0.8562×10^2	$= 85.62$
$0.8562 \times 1,000$	0.8562×10^3	$= 856.2$
$0.8562 \times 10,000$	0.8562×10^4	$= 8,562$
$0.8562 \times 100,000$	0.8562×10^5	$= 85,620$

Division: Decimal point moves to the left

$856,200 \div 1$	$856,200 \div 10^0$	$= 856,200$
$856,200 \div 10$	$856,200 \div 10^1$	$= 85,620$
$856,200 \div 100$	$856,200 \div 10^2$	$= 8,562$
$856,200 \div 1,000$	$856,200 \div 10^3$	$= 856.2$
$856,200 \div 10,000$	$856,200 \div 10^4$	$= 85.62$
$856,200 \div 100,000$	$856,200 \div 10^5$	$= 8.562$

Decimal Place Value Chart													
Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones	Decimal point	Tenths	Hundredths	Thousandths	Ten-thousandths	Hundred thousandths	Millionths
			3	6	8	4	.	2	6				



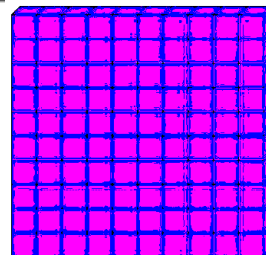
1 whole = 1.00



1 tenth = 0.10



1 hundredth = 0.01



1.32

Comparing Decimals

- Line up the decimal points
- Compare each digit

$$6.49 = 6.490$$

$$6 = 6.000$$

$$0.649 = 0.649$$

Ex: $6.49 > 6 > 0.649$

$$5.7 = 5.70 > 5.007$$

$$5.7 = 5.70 = 5.700$$

Adding decimals to the end of a number does not change its value. This is helpful when adding and subtracting decimals

Rounding Decimals

- If the digit to the right of the place to be rounded is 5 or greater, increase the rounding digit by 1
- If the digit to the right of the place to be rounded is less than 5, don't change the rounding digit.
- Drop all remaining digits

Ex: $0.5871 = 0.6$ $0.5871 = 0.59$ $0.5871 = 0.587$

Helpful videos:

<https://www.khanacademy.org/math/4th-engage-ny/engage-4th-module-6/4th-module-6-topic-c/v/comparing-decimals-with-hundredths>

<https://www.khanacademy.org/math/arithmetric/arith-decimals/arith-review-add-decimals/v/adding-decimals-example-1>

Addition

- > Find the decimal
- > Line up the decimals
- > Fill in empty spots with zero
- > Add
- > Bring down the decimal in your answer

EXAMPLE Rewritten with decimals lined up...

$$\begin{array}{r} 10.5 + 11.74 \\ \\ + 11.74 \\ \hline 22.24 \end{array}$$

Subtraction

- > Find the decimal
- > Line up the decimals
- > Fill in empty spots with zero
- > Subtract
- > Bring down the decimal in your answer

EXAMPLE Rewritten with decimals lined up...

$$\begin{array}{r} 12.7 - 9.23 \\ \\ - 9.23 \\ \hline 3.47 \end{array}$$

Rules of Decimals

Multiplication

- > The number with most digits goes on top
- > Decimals do not have to line up
- > Multiply like normal
- > Count how many places in first number the decimal is moved over
- > Count how many places in 2nd number the decimal is moved over
- > This is how many places you move the decimal in your answer

EXAMPLE

$$\begin{array}{r} 1.201 < 3 \text{ DECIMAL PLACES} \\ \times 0.25 < 2 \text{ DECIMAL PLACES} \\ \hline 6005 \\ 24020 \\ \hline .30025 < 5 \text{ DECIMAL PLACES} \end{array}$$

Division

- > Divisor can not have a decimal
- > Move the divisor decimal so it is a whole number
- > Move the same amount of places in dividend
- > Place a decimal straight up where you write your answer, rewrite problem
- > Divide like normal

EXAMPLE

DIVISOR > 0.3 $\overline{)1.41}$

$$\begin{array}{r} 4.7 \\ 3 \overline{)14.1} \\ \underline{-12} \\ 21 \\ \underline{-21} \\ 0 \end{array}$$