

Rules of Decimals

by Mary Moore

Addition

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

EXAMPLE

$$10.5 + 11.74$$

Rewritten with decimals lined up...

$$\begin{array}{r} 10.50 \\ + 11.74 \\ \hline 22.24 \end{array}$$

Subtraction

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

EXAMPLE

$$12.7 - 9.23$$

Rewritten with decimals lined up...

$$\begin{array}{r} 12.70 \\ - 9.23 \\ \hline 3.47 \end{array}$$

Subtraction

$$8.08$$

$$- 2.78$$

$$8.50$$

$$- 7.74$$

$$18.75$$

$$- 9.23$$

$$32.70$$

$$- 19.23$$

$$10.00$$

$$- 7.28$$

$$9.75$$

$$- 5.25$$

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

$$\begin{array}{r} 1.201 < 3 \text{ DECIMAL PLACES} \\ \times 25 < 2 \text{ DECIMAL PLACES} \\ \hline 6005 \\ 24020 \\ \hline 30025 < 5 \text{ DECIMAL PLACES} \end{array}$$

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 > $0.3 \overline{)1.41}$

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

Practice Decimal Operations

Division

$$.2 \overline{)14.8}$$

$$.5 \overline{)35.0}$$

M. Moore
Educational Resources

Rules of Decimals

by Mary Moore

With this graphic organizer for Decimal Operations, there are several methods in which you may use it in your classroom and in which I've utilized it in my class rooms. Some suggestions are included with this packet.

1st suggested use of this resource: Students create the graphic organizer in their interactive notebooks. First only have them do addition of decimals and do some practice problems for about 30 minutes of instructional time. Next do the same with subtractions, multiplication, then division. Allow students to use colored pencils or colored pens that coordinate to the color of the operation they are performing.

2nd suggested use: Another use would be to review operations with decimals as a mini lesson. Handout the page with the notes of the operations and examples not done. Review the handout and operations. Walk around and check student's work to ensure they understand how to solve math problems with decimals.

3rd suggested use: Modify the graphic organizer with different examples and leaving some words blank to create a quiz. An example of this type of quiz is in the following pages.

Thank you for your interest in my product.

Sincerely,

Mary Moore



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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

$$\begin{array}{r} 1.201 < 3 \text{ DECIMAL PLACES} \\ \times .25 < 2 \text{ DECIMAL PLACES} \\ \hline 6005 \\ 24020 \\ \hline .30025 < 5 \text{ DECIMAL PLACES} \end{array}$$

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 > $0.3 \overline{)1.41}$

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

Students can solve the problems with color pencils in the color of the operation or use blank organizer on following page to take notes & write their own examples

Addition

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

EXAMPLE

$$12.5 + 9.74$$

Subtraction

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

EXAMPLE

$$18.7 - 11.23$$

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

$$\begin{array}{r} 1.430 \\ \times .55 \\ \hline \end{array}$$

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

$$\text{DIVISOR} > 0.4 \overline{) 2.85}$$

Blank graphic organizer on following page to take notes & write their own examples

Addition

Subtraction

Rules of Decimals

Multiplication

Division

PRACTICE PROBLEMS - I would let them use color pencils or ink pens to do the problems. Students enjoy the flexibility to utilize color pencils/pens. Red for addition, Green for subtraction....

Addition

$$\begin{array}{r} 7.12 \\ + 3.23 \\ \hline \end{array}$$

$$\begin{array}{r} 8.08 \\ + 2.78 \\ \hline \end{array}$$

$$\begin{array}{r} 13.72 \\ + 15.77 \\ \hline \end{array}$$

$$\begin{array}{r} 23.50 \\ + 32.74 \\ \hline \end{array}$$

Subtraction

$$\begin{array}{r} 18.75 \\ - 9.23 \\ \hline \end{array}$$

$$\begin{array}{r} 10.00 \\ - 7.28 \\ \hline \end{array}$$

$$\begin{array}{r} 32.70 \\ - 19.23 \\ \hline \end{array}$$

$$\begin{array}{r} 9.75 \\ - 5.25 \\ \hline \end{array}$$

Practice Decimal Operations

Multiplication

$$\begin{array}{r} 7.12 \\ \times 0.23 \\ \hline \end{array}$$

$$\begin{array}{r} 1.58 \\ \times 1.78 \\ \hline \end{array}$$

$$\begin{array}{r} 13.72 \\ \times 5.77 \\ \hline \end{array}$$

$$\begin{array}{r} 23.50 \\ \times 32.74 \\ \hline \end{array}$$

Division

$$.2 \overline{)14.8}$$

$$.5 \overline{)35.0}$$

$$.25 \overline{)30.0}$$

$$.7 \overline{)42.0}$$

PRACTICE PROBLEMS - ANSWER KEY

Addition

$$\begin{array}{r} 7.12 \\ + 3.23 \\ \hline 10.35 \end{array}$$

$$\begin{array}{r} 8.08 \\ + 2.78 \\ \hline 10.86 \end{array}$$

$$\begin{array}{r} 13.72 \\ + 15.77 \\ \hline 29.49 \end{array}$$

$$\begin{array}{r} 23.50 \\ + 32.74 \\ \hline 56.24 \end{array}$$

Subtraction

$$\begin{array}{r} 18.75 \\ - 9.23 \\ \hline 9.52 \end{array}$$

$$\begin{array}{r} 10.00 \\ - 7.28 \\ \hline 2.72 \end{array}$$

$$\begin{array}{r} 32.70 \\ - 19.23 \\ \hline 13.47 \end{array}$$

$$\begin{array}{r} 9.75 \\ - 5.25 \\ \hline 4.50 \end{array}$$

Practice Decimal Operations

Multiplication

$$\begin{array}{r} 7.12 \\ \times 0.23 \\ \hline 1.6376 \end{array}$$

$$\begin{array}{r} 1.58 \\ \times 1.78 \\ \hline 2.8124 \end{array}$$

$$\begin{array}{r} 13.72 \\ \times 5.77 \\ \hline 79.1644 \end{array}$$

$$\begin{array}{r} 23.50 \\ \times 32.74 \\ \hline 769.39 \end{array}$$

Division

$$\begin{array}{r} 74.0 \\ .2 \overline{)14.8} \end{array}$$

$$\begin{array}{r} 70.0 \\ .5 \overline{)35.0} \end{array}$$

$$\begin{array}{r} 120.0 \\ .25 \overline{)30.0} \end{array}$$

$$\begin{array}{r} 60.0 \\ .7 \overline{)42.0} \end{array}$$

Addition

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

$$\begin{array}{r} \text{SOLVE} \\ 18.2 + 7.74 \\ \hline \end{array} \quad \begin{array}{r} \text{SOLVE} \\ 6.5 + 15.74 \\ \hline \end{array}$$

Subtraction

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

$$\begin{array}{r} \text{SOLVE} \\ 10.7 - 6.23 \\ \hline \end{array} \quad \begin{array}{r} \text{SOLVE} \\ 18.7 - 9.23 \\ \hline \end{array}$$

Rules of Decimals

Multiplication

- > The number with most digits goes on _____
- > Decimals _____ have to line up
- > Multiply like normal
- > Count how many _____ in first number the decimal is moved over
- > Count how many _____ in 2nd number the decimal is moved over
- > This is how many _____ you move the _____ in your answer

$$\begin{array}{r} \text{SOLVE} \\ 2.561 \\ \times .45 \\ \hline \end{array} \quad \begin{array}{r} \text{SOLVE} \\ 7.021 \\ \times .15 \\ \hline \end{array}$$

Division

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

$$\begin{array}{r} \text{SOLVE} \\ 0.2 \overline{)2.48} \\ \hline \end{array} \quad \begin{array}{r} \text{SOLVE} \\ 0.6 \overline{)7.86} \\ \hline \end{array}$$

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