### Rules of Decimals

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

**Example**

<table>
<thead>
<tr>
<th>10.5 + 11.74</th>
<th>10.50</th>
<th>+ 11.74</th>
<th>22.24</th>
</tr>
</thead>
</table>

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

**Example**

<table>
<thead>
<tr>
<th>12.7 - 9.23</th>
<th>6.10</th>
<th>- 9.23</th>
<th>3.47</th>
</tr>
</thead>
</table>

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

**Example**

<table>
<thead>
<tr>
<th>1.201 x 0.25</th>
<th>6005</th>
<th>24020</th>
<th>30025</th>
</tr>
</thead>
</table>

**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**

<table>
<thead>
<tr>
<th>0.2 ÷ 14.8</th>
<th>36</th>
<th>141</th>
<th>141 - 12 = 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7 ÷ 3</td>
<td>14.1</td>
<td>12 = 21</td>
<td>21</td>
</tr>
</tbody>
</table>

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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.

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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**

\[
\begin{align*}
10.5 & + 11.74 \\
& \quad 10.50 \\
+ & 11.74 \\
\hline
& 22.24
\end{align*}
\]

**Rewritten with decimals lined up...**

\[
\begin{align*}
10.50 & + 11.74 \\
\hline
22.24
\end{align*}
\]

**Subtraction**

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

**Example**

\[
\begin{align*}
12.7 & - 9.23 \\
& \quad 12.70 \\
- & 9.23 \\
\hline
& 3.47
\end{align*}
\]

**Rewritten with decimals lined up...**

\[
\begin{align*}
12.70 & - 9.23 \\
\hline
3.47
\end{align*}
\]

**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**

\[
\begin{align*}
1.201 & \times 0.25 \\
\hline
0.30025
\end{align*}
\]

**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**

\[
\begin{align*}
4.7 & \div 3 \!
\]

\[
\begin{array}{c|cc}
\hline
3 & 14.1 \\
\hline
-12 & 21 \\
-21 & 0
\end{array}
\]

\[
\begin{align*}
& 0.3 \overline{1.41}
\end{align*}
\]

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# Rules of Decimals

## 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**

\[ 18.7 - 11.23 \]

## 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**

\[
\begin{array}{c}
1.430 \\
\times \ 0.55 \\
\hline
\end{array}
\]

## 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**

\[ 0.4 \overline{)2.85} \]
Rules of Decimals

Addition

Subtraction

Multiplication

Division

Blank graphic organizer on following page to take notes & write their own examples
### Practice Decimal Operations

#### Addition

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.12</td>
<td>8.08</td>
</tr>
<tr>
<td>+ 3.23</td>
<td>+ 2.78</td>
</tr>
<tr>
<td>13.72</td>
<td>23.50</td>
</tr>
<tr>
<td>+ 15.77</td>
<td>+ 32.74</td>
</tr>
<tr>
<td>23.50</td>
<td>35.74</td>
</tr>
</tbody>
</table>

#### Subtraction

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18.75</td>
<td>10.00</td>
</tr>
<tr>
<td>- 9.23</td>
<td>- 7.28</td>
</tr>
<tr>
<td>32.70</td>
<td>9.75</td>
</tr>
<tr>
<td>- 19.23</td>
<td>- 5.25</td>
</tr>
</tbody>
</table>

#### Multiplication

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.12</td>
<td>1.58</td>
</tr>
<tr>
<td>× 0.23</td>
<td>× 1.78</td>
</tr>
<tr>
<td>1.7056</td>
<td>2.728</td>
</tr>
<tr>
<td>13.72</td>
<td>23.50</td>
</tr>
<tr>
<td>× 5.77</td>
<td>× 32.74</td>
</tr>
<tr>
<td>78.214</td>
<td>432.28</td>
</tr>
</tbody>
</table>

#### Division

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.2</td>
<td>14.8</td>
</tr>
<tr>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td>.25</td>
<td>30.0</td>
</tr>
<tr>
<td>.7</td>
<td>42.0</td>
</tr>
</tbody>
</table>

## Practice Problems - Answer Key

### Addition

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.12</td>
<td>8.08</td>
<td>18.75</td>
</tr>
<tr>
<td>+ 3.23</td>
<td>+ 2.78</td>
<td>- 9.23</td>
</tr>
<tr>
<td>10.35</td>
<td>10.86</td>
<td>9.52</td>
</tr>
<tr>
<td>13.72</td>
<td>23.50</td>
<td>32.70</td>
</tr>
<tr>
<td>+ 15.77</td>
<td>+ 32.74</td>
<td>- 19.23</td>
</tr>
<tr>
<td>29.49</td>
<td>56.24</td>
<td>13.47</td>
</tr>
</tbody>
</table>

### Subtraction

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.12</td>
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<td>10.86</td>
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<td>9.23</td>
<td>2.72</td>
</tr>
<tr>
<td>10.00</td>
<td>7.28</td>
<td></td>
</tr>
</tbody>
</table>

### Practice Decimal Operations

### Multiplication

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.12</td>
<td>1.58</td>
<td>74.0</td>
</tr>
<tr>
<td>× 0.23</td>
<td>× 1.78</td>
<td>.2</td>
</tr>
<tr>
<td>1.6376</td>
<td>2.8124</td>
<td>.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.72</td>
<td>23.50</td>
<td>120.0</td>
</tr>
<tr>
<td>× 5.77</td>
<td>× 32.74</td>
<td>.25</td>
</tr>
<tr>
<td>79.1644</td>
<td>769.39</td>
<td>.7</td>
</tr>
</tbody>
</table>

### Division

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>74.0</td>
<td>70.0</td>
</tr>
<tr>
<td>70.0</td>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td>.2</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>.5</td>
<td></td>
<td>42.0</td>
</tr>
</tbody>
</table>
**Addition**

> Find the decimal
> _________ the decimals
> Fill in empty spots with _______
> Add
> Bring down the ______ in your answer

**Subtraction**

> Find the decimal
> Line up the _________
> Fill in empty spots with_______
> _________
> Bring down the ______in your answer

**Multiplication**

> The number with most digits goes on ______
> Decimals ____________ have to line up
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> Count how many _______ in first number the
decimal is moved over
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the decimal is moved over
> This is how many ______ you move the
________in your answer

**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 ____________

---

**SOLVE**

18.2 + 7.74

6.5 + 15.74

10.7 - 6.23

18.7 - 9.23

---

**SOLVE**

2.561

X .45

7.021

X .15

0.2)2.48

0.6)7.86
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