

## 3-1 Representing, Comparing, and Ordering Decimals (Page 93)

Ones Place	Decimal Place	Tenths Place	Hundredths Place	Thousandths Place	Ten-Thousandths	Hundred Thousandths Place
2	.	7	3	4	6	9

Note: The decimal gives us the right to say the word “and.”

How to read a number with a decimal? Say the whole number regularly first followed by an “and.” Then read the number to the right of the decimal point normal as well then add the ending of the last place value.

For the above number in the table we would say: two and seventy-three thousand four hundred sixty-nine hundred thousandths.

Ex # 1) 14.56 = fourteen and fifty-six hundredths

Ex # 2) 5.378 = five and three hundred seventy-eight thousandths

Ex # 3) 9.7 = nine and seven tenths

**Standard form** = the number written in numerical form

**Written form** = the number written in word form

**Expanded form** = the number written out showing each place value

Standard	Written	Expanded
5.28	Five and twenty-eight hundredths	$5 + 0.2 + 0.08$
13.587	Thirteen and five hundred eighty-seven thousandths	$10 + 3 + 0.5 + 0.08 + 0.007$
		$1 + 0.4 + 0.06$
	Two and four hundred ninety two thousandths	
9.78954		

**Comparing Decimals:** you compare numbers by looking at each place value. When the value is the same for each place value, move to the right until you find one greater. Just remember that we are looking for the greatest value, not the number with the most digits.

Ex # 1) 1.56            1.57

Ex # 2) 14.899        14.898

Ex # 3) 6.057         6.0570

**Ordering Decimals:** write down the numbers on top of each lining up the numbers and the decimal points.

Ex # 1) Order the following from least to greatest

15.36          15.34          15.24          14.8798      →

Answer: \_\_\_\_\_

15.36
15.34
15.24
14.8798

Ex # 2) Order the following from least to greatest.

2.3          2.03          2.303          2.00      →

Answer: \_\_\_\_\_

2.3
2.03
2.303
2.00

**Hint**

Be sure to add zeroes to the place value that does not have a number so that each number has an equal number of place values making it easier to compare.

Date \_\_\_\_\_

**3-2 Estimating Decimals (Page 96)**

Remember the rounding rules: Look to the right of the number you (or place value) that you are rounding to. If it is five or above give it a shove – four or below let it go.

**Estimating by rounding to the underlined place value**

Ex # 1) 15.25          \_\_\_\_\_      Ex # 2) 1.587          \_\_\_\_\_      Ex # 3) 4.807          \_\_\_\_\_

**Estimating by rounding to the indicated place value**

Ex # 1) **12.89** (tenths)          \_\_\_\_\_          **57.8945** (thousandths)          \_\_\_\_\_

**Finding sums or differences using estimating. ESTIMATE FIRST THEN ADD OR SUBTRACT**

Ex # 1)  $5.37 + 8.74$  (tenths)

+
_____

Ex # 2)  $14.879 - 12.123$  (hundredths)

-
_____

**Estimating using compatible numbers.**

Ex # 1)  $82.4 \div 9.1$  (change numbers to make it easier to add, subtract, multiply, or divide) Remember that rounding rules do not apply.) You would make this  $81 \div 9 = 9$  This problem was done by changing both numbers to make it easier to do in my head. You sometimes may only change one number. Objective make it so you can do it in your head.

**3-3 Adding & Subtracting Decimals (Page 102)****When adding and subtracting decimals you should:**

- Line up the problem vertically
- Line up the decimal places and place values
- Add zeroes to make sure that each number has the same number of digits
- Check the sign

Ex # 1)  $1.5 + 2.3$

Ex # 2)  $8.16 - 7.02$

Ex # 3)  $10.64 - 8.5$

+ \_\_\_\_\_                      - \_\_\_\_\_                      - \_\_\_\_\_

\*\*\*\*\* **Make sure that your decimal point is visible!**

**3-4 Decimals and Metric Measurement (page106)**

**Multiplying or dividing by powers of 10** (Start at the decimal point and if there is not one start all the way to the right)

Ex # 1)  $4,325 \times 1,000$

(multiply means go to the right)

Ex # 2)  $4,325 \div 1,000$

(Divide means go to the left)

Ex # 3)  $79.95 \div 10^4$

Divide means go to the left)




Answer \_\_\_\_\_

Answer \_\_\_\_\_

Answer \_\_\_\_\_

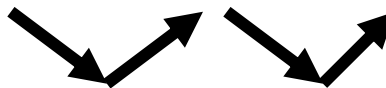
**Zeros and powers of ten:** the zeroes tell you how many places to move left or right. (remember multiply right, divide left) The exponent also tells you how many places to move left or right.

**Metric System**

	Unit	Abbreviation	Approximate Comparison	
	Length	Kilometer	km	Length of 10 football fields
	Meter	m		Width of a door
	Centimeter	cm		Width of your little finger
	Millimeter	mm		Thickness of a dime
	Mass	Kilogram	kg	Mass of a textbook
	Gram	g		Mass of a small paperclip
	Capacity	Liter	L	Filled bottle of sparkling water
	Milliliter	mL		Half-filled eyedropper

<b>1,000</b>	<b>100</b>	<b>10</b>	<b>1</b>	<b>0.1</b>	<b>0.01</b>	<b>0.001</b>
<b>Thousands</b>	<b>Hundreds</b>	<b>Tens</b>	<b>Ones</b>	<b>Tenths</b>	<b>Hundredths</b>	<b>Thousandths</b>
<b>Kilo</b>	<b>Hecto</b>	<b>Deca</b>	<b>Base</b>	<b>Deci</b>	<b>Centi</b>	<b>Milli</b>

<b>Kyle</b>	<b>Hates</b>	<b>Dates</b>	<b>Because</b>	<b>Dates</b>	<b>Cost</b>	<b>Money</b>
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When converting from unit of measure to another: Start with what they give you and hop to the left or the right to land on what they want to know.

Ex # 1) 6 m = 600 cm

Start on meters, hop two places to the right and stop on centimeters. How many places did you hop. (Two to the right) Move the decimal two places to the right.

**What if the number does not have a decimal?** It is on the far right.

Ex # 2) 10mm = \_\_\_\_\_ cm      Ex # 3) 20kg = \_\_\_\_\_ g      Ex # 4) 14 mm = \_\_\_\_\_ m

Date \_\_\_\_\_

### 3-5 Scientific Notation (Page 114)

**Scientific Notation** = a shorthand method for writing large numbers.

#### Write each number in scientific notation

1. Start at the decimal place ( if there is not one start all the way to the right)
2. Move or hop to the left until you get to between the last and second last number (or until you get right before the first number on the left)
3. Write the new decimal number times ten to the power of how many places you moved  
(The exponent tells you how many places you moved)

Ex # 1)      **700,000**

Ex # 2)      **8,296,000**

Ex # 3)      **58,000**

Answer      **7.0 X 10<sup>5</sup>**

Answer \_\_\_\_\_

Answer \_\_\_\_\_

**Write each number in standard form** (Move the decimal to the right *if multiplication* the number of places that the exponents tell you) Example if the exponent is 3, then you move it three places to the right. Start at the decimal point

Ex # 1) **3.02 X 10<sup>4</sup>**

Ex # 2) **1.7 X 10<sup>7</sup>**

Ex # 3) **5.657 X 10<sup>3</sup>**

Answer = **30,200**

Answer \_\_\_\_\_

Answer \_\_\_\_\_

## 3-6 Multiplying Decimals (Page 120)

**When multiplying decimals be sure to line up as you would with whole numbers and multiply. Then move the decimal, starting on the right, to the left however many decimal places there are.**

Ex # 1)  $3 \times 0.17$

$$\begin{array}{r} 0.17 \\ \times 3 \\ \hline \end{array} \textcircled{2}$$

Answer \_\_\_\_\_

Ex # 2)  $0.2 \times 0.6$

$$\begin{array}{r} 0.2 \\ \times 0.6 \\ \hline \end{array}$$

Answer \_\_\_\_\_

Ex # 3)  $3.25 \times 4.8$

$$\begin{array}{r} 3.25 \\ \times 4.8 \\ \hline \end{array}$$

Answer \_\_\_\_\_

## 3-7 Dividing Decimals by a Whole Number (Page 124)

$$\begin{array}{r} 4 \\ \overline{) 28} \end{array}$$

Divisor  $\longrightarrow$  7      Quotient  
Dividend

**When dividing decimals by whole numbers:**

- 1. Be sure to set it up like a normal division problem.**
- 2. Then immediately bring the decimal point up into the quotient.**
- 3. Divide as usual. If your number keeps going on, please stop and check your work. If it continues to go on, stop and round to the thousandths place or as directed in the directions.**

Ex # 1)  $0.75 \div 5$

$$\overline{) \phantom{0.75}}$$

Answer \_\_\_\_\_

Ex # 2)  $2.52 \div 3$

$$\overline{) \phantom{2.52}}$$

Answer \_\_\_\_\_

Ex # 3)  $12.8592 \div 6$

$$\overline{) \phantom{12.8592}}$$

Answer \_\_\_\_\_

## 3-8 Dividing by Decimals (Page 127)

**When dividing decimals by decimals:**

1. **You must first remove the decimal from the divisor. Move the decimal to the right as many times as you need to until the divisor becomes a whole number.**
2. **Then move the decimal in the dividend the same amount of places that you moved it in the divisor.**
3. **Then just divide normally like you would without decimals or with decimals in the dividend.**

Ex # 1)  $3.6 \div 1.2$



Ex # 2)  $41.6 \div 0.39$



Ex # 3)  $4.9 \div 0.007$



Answer \_\_\_\_\_

Answer \_\_\_\_\_

Answer \_\_\_\_\_

## 3-9 Interpret the Quotient (Page 131)

When solving a word problem, figure out what you are trying to find. See what they are giving you and what you do not need. For these problems, you are dividing. You need to now figure out what goes on the inside and what goes on the outside.

Ex # 1) Kim uses 0.87 kg of corn starch to make gift bags of slime for her friends. If each bag requires 0.15 kg of corn starch, how many bags of slime can she make?

Hints: What is the total? How much is each one? The total goes inside. The amount of each one goes outside.

$0.87 \div 0.15$

Answer \_\_\_\_\_ (Do not forget a label)



Ex # 2) There are 246 students in the sixth grade. If Mr. Lee buys rolls of film with 24 exposures each, how many rolls of film will he need to take every student's picture?

Answer \_\_\_\_\_



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Date \_\_\_\_\_

### 3-10 Decimal Equations (Page134)

**Perform the Inverse Operation!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!**

Ex # 1)  $X - 3.1 = 4.5$

Ex # 2)  $3X = 8.1$

Ex # 3)  $m/5 = 1.5$

Ex # 4)  $X + 8.4 = 16.6$

Answer \_\_\_\_\_

Answer \_\_\_\_\_

Answer \_\_\_\_\_

Answer \_\_\_\_\_