

**FOR ALL STUDENTS TAKING PRE-ALGEBRA
2021-2022**

SUMMER REVIEW PACKET

NAME _____

To all Orangeburg Prep Math Students:

In an effort to continue to improve our standardized test scores and prevent knowledge loss over the summer break, you are asked to complete the attached worksheets and be prepared to turn them in on the first day of classes. The questions in the packet focus on the skills you were taught in your previous math courses. Some problems may be a bit involved, so it is not a good idea to wait until the last minute.

Work needs to accompany each problem and all answers should be in simplified form. The PRINTED packet is due at the beginning of class on Aug. 19 and will be counted as a project grade. A score of 80% will be given if every problem is attempted. Additional points, up to 20%, will be given for accuracy.

You will also be given a quiz on this packet during the first week of school, so make sure to bring questions that you have during Open House on Aug. 17. Any assignment not turned in on time will receive a 10 point deduction for each day that it is late.

Enjoy your summer vacation and your math packet. We look forward to a great school year starting in August.

The Math Department

HONOR CODE: I promise that I completed this summer review packet independently from any other student. I used only the resources given in this packet. **I did NOT use Photomath or any similar program!**

PARENT: _____

STUDENT: _____

Helpful Websites

www.regentsprep.org

www.khanacademy.org

www.purplemath.com/modules

www.Aleks.com (a website where you can subscribe for individual math lessons)

A. Fractions & Decimals

Place Value with decimals

0.29456

Tenths
Hundredths
Thousandths
Ten Thousandths
Hundred Thousandths

Changing Decimals to Fractions / Mixed Numbers

0.28

$$\frac{28}{100}$$

$$\frac{28 \div 4}{100 \div 4}$$

$$\frac{7}{25}$$

0.102

$$\frac{102}{1000}$$

$$\frac{102 \div 2}{1000 \div 2}$$

$$\frac{51}{500}$$

31.0045

$$31 \frac{45}{10000}$$

$$31 \frac{45 \div 5}{10000 \div 5}$$

$$31 \frac{9}{2000}$$

Changing Fractions / Mixed Numbers to Decimals:

$$\frac{3}{8}$$

$$0.375$$

$$8 \overline{)3.000}$$

$$\begin{array}{r} -24 \\ \hline 60 \\ -56 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

0.375

$$18 \frac{2}{3}$$

$$0.666$$

$$3 \overline{)2.000}$$

$$\begin{array}{r} -18 \\ \hline 20 \\ -18 \\ \hline 20 \\ -18 \\ \hline 2 \end{array}$$

18.6

Fill in the table with a fraction / mixed number (simplest form) or decimal.

Fraction	Decimal	Fraction	Decimal
$\frac{1}{2}$	0.50	$\frac{7}{5}$	1.4
$\frac{12}{9}$		$\frac{999}{1000}$	
0.006		2.5	
$\frac{13}{16}$			14.022
	0.01	$\frac{6}{7}$	

Show your work in the space provided below.

B. Factors

Two or more numbers that are multiplied to form a product are called factors.

$$\boxed{\text{Factors}} \rightarrow 4 \times 9 = 36 \leftarrow \boxed{\text{Product}}$$

So, 4 and 9 are factors of 36 because they each divide 36 with a remainder of 0. We can say that 36 is divisible by 4 and 9. However, 5 is not a factor of 36 because $36 \div 5 = 7$ with a remainder of 1.

Example: List all the factors of 72

Number	72 Divisible by Number?	Factor Pairs
1	yes	1×72
2	yes	2×36
3	yes	3×24
4	yes	4×18
5	no	-----
6	yes	6×12
7	no	-----
8	yes	8×9
9	yes	9×8

Use division to find the other factor in each factor pair.
 $72 \div 2 = 36$

You can stop finding factors when the numbers start repeating.

The factors of 72 are 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, and 72.

List all the factors of each number.

1.) 75

2.) 57

3.) 90

4.) 102

C. Comparing and Ordering Decimals

Examples: Write $<$ or $>$ in the answer blank to make a true statement.

$2.36 \underline{\quad} 2.4$

$0.043 \underline{\quad} 0.0092$

2.36

Write the numbers one above the other.

Line up the decimal points.

$0.043\mathbf{0}$

$2.4\mathbf{0}$

Write an additional zero(s) to easily compare
OR compare the first place value where the
digits are not the same.

0.0092

$2.36 \underline{<} 2.4$

(3 tenths is less than 4 tenths)

$0.043 \underline{>} 0.0092$

Write $<$ or $>$ in the answer blank to make a true statement.

$1.) 4.05 \underline{\quad} 4.45$

$2.) 3.005 \underline{\quad} 3.05$

$3.) 1.9 \underline{\quad} 1.96$

$4.) 32.1 \underline{\quad} 3.215$

$5.) 0.943 \underline{\quad} 0.4991$

$6.) 0.048 \underline{\quad} 0.11$

$7.) 9.1 \underline{\quad} 9.005$

$8.) 0.66 \underline{\quad} 0.582$

Order each set of decimals from least to greatest.

Example: 9.07, 8.925, 9.5, 9.48

$9.07\mathbf{0} \rightarrow 2^{\text{nd}}$

$8.925 \rightarrow 1^{\text{st}} \text{ (smallest)}$

$9.5\mathbf{00} \rightarrow 4^{\text{th}} \text{ (largest)}$

$9.48\mathbf{0} \rightarrow 3^{\text{rd}}$

Final Answer: 8.925, 9.07, 9.48, 9.5

$9.) \{0.2, 1.0, 0.06\}$

$10.) \{3.5, 0.6, 2.06, 0.28\}$

$11.) \{7.026, 7.061, 7.009, 7.1\}$

D. Adding and Subtracting Decimals

To add or subtract decimals, write the numbers vertically and be sure to line up the decimal points. Then add or subtract and bring down the decimal point into the answer.

Ex. $8.2 + 3.4$

$$\begin{array}{r} 8.2 \\ + 3.4 \\ \hline 11.6 \end{array}$$

Line up the decimal points. Then add.

Ex. $7 - 1.75$

$$\begin{array}{r} 7.00 \\ - 1.75 \\ \hline 5.25 \end{array}$$

Add zeros. Line up the decimal points. Then subtract.

1.) $5.2 - 3.01$

2.) $9.43 + 1.8$

3.) $0.8 + 9.612$

4.) $18 - 12.31$

5.) How much more than \$102.90 is \$115?

E. Rounding

Round each number to the nearest whole number or dollar.

1.) 3.2

2.) \$50.57

3.) 38.726

Examples: $\underline{5.8}$ rounds to 6
 $\underline{5.3}$ rounds to 5

Round each number to the nearest tenth.

4.) 16.57

5.) 53.865

6.) 49.975

Examples: $5.\underline{2}46$ rounds to 5.2
 $5.\underline{2}7$ rounds to 5.3

Round each number to the nearest hundredth.

7.) 62.624

8.) 85.5639

9.) 458.7625

Examples: $5.\underline{27}9$ rounds to 5.28
 $5.\underline{27}16$ rounds to 5.27

F. Multiplying and Dividing Decimals

Ex. 6.3(2.1)

$$\begin{array}{r}
 6.3 \leftarrow 1 \text{ decimal place} \\
 \times 2.1 \leftarrow 1 \text{ decimal place} \\
 \hline
 63 \\
 1260 \leftarrow \text{Add a zero for place value} \\
 \hline
 13.23 \leftarrow 2 \text{ decimal places} \\
 \hline
 \text{The product is } \underline{\underline{13.23}}.
 \end{array}$$

Ex. 9.47(0.5)

$$\begin{array}{r}
 9.47 \leftarrow 2 \text{ decimal place} \\
 \times 0.5 \leftarrow 1 \text{ decimal place} \\
 \hline
 4.735 \leftarrow 3 \text{ decimal places} \\
 \hline
 \text{The product is } \underline{\underline{4.735}}.
 \end{array}$$

When you divide decimals, the goal is for the divisor (the number you are dividing by on the “outside” of the long division) to be a **whole number**.

Move the decimal point to the right however many spaces you need until the divisor (on the “outside”) is a whole number. Move the decimal point on the “inside” the same number of spaces.

$$\begin{array}{r}
 128 \\
 0.25 \overline{) 32.00} \\
 \underline{25} \\
 70 \\
 \underline{50} \\
 200 \\
 \underline{200} \\
 0
 \end{array}$$

Move each decimal point right two places

$$\begin{array}{r}
 1.5 \\
 0.8 \overline{) 1.20} \\
 \underline{8} \\
 40 \\
 \underline{40} \\
 0
 \end{array}$$

Move each decimal point right one place

Find each product or quotient.

1.) $1.4(6.1)$

2.) 0.47×3.01

3.) $0.001(7.09)$

Showing Multiplication:

$1.4(6.1)$
means 1.4×6.1

4.) $0.51 \div 0.03$

5.) $0.384 \div 1.2$

6.) $25.9 \div 2.8$

G. Order of Operations

How to:

1. Perform operations inside parentheses
2. Do any exponents
3. Multiply or divide from left to right
4. Add or subtract from left to right

Showing Multiplication:

$$6 \cdot 7 \text{ means } 6 \times 7$$

Example 1:

$$9 + 12 \div 3 \cdot 2 \cdot 5 \div 10$$

Work

$$9 + 12 \div 3 \cdot 2 \cdot 5 \div 10$$

$$9 + 4 \cdot 2 \cdot 5 \div 10$$

$$9 + 8 \cdot 5 \div 10$$

$$9 + 40 \div 10$$

$$9 + 4$$

$$\textcircled{13}$$

Example 2:

$$27 - 2 \cdot (4 - 1) + 7$$

Work

$$27 - 2 \cdot (4 - 1) + 7$$

$$27 - 2 \cdot 3 + 7$$

$$27 - 6 + 7$$

$$21 + 7$$

$$\textcircled{28}$$

← Perform operations inside parentheses.

← Multiply.

← Add/Subtract going left to right.

Use the order of operations to find the value of each expression.

1.) $(3 \cdot 4) - 9$

2.) $23 + 7 \cdot (18 \div 6)$

3.) $100 + 10 \cdot 2 \div 4 \cdot 3 - 1$

4.) $(16 \div 4) \cdot (5 + 5)$

5.) $15 \cdot (13 - 7) \div (8 - 5)$

6.) $16 \div 4 \cdot 1 + 3 - 5 + 2$