

St. Louis School
2024 Summer Math
Entering 7th Grade
Math 7

All students in middle school are required to complete summer math work. This year, to reinforce learning during the summer and promote growth, students will be using IXL online in addition to worksheets for math practice.

- I. **IXL** – Each class has specifically assigned skills in IXL. IXL is an online program geared toward fluency practice. Students simply access the list of skills created by their teacher and click on a link to select an assigned skill. The link will take students to the skill where they login to begin. Students will use their St. Louis account to log on as they have done all school year. [Link to IXL](#)

Students should pace themselves by completing five concepts each month at a level of 80% proficiency (five by June 26, an additional five by July 28, and five more by August 23). Teachers will be monitoring students' progress throughout the summer. Failure to complete the suggested skills will result in a lower effort grade.

Please contact Mrs. Zulma Whiteford at zwhiteford@stlouisparish.org if you have any questions or concerns about IXL.

- II. **Worksheets** – Scroll down to print the worksheets.

- **Show all work either on the worksheet or on looseleaf** in order to receive credit. Answers alone without supporting work will not receive credit.
- The looseleaf **MUST** include the student's name and be attached to the packet.
- Make sure to number the problems clearly. Work should be neat and organized.
- Class notes may be used for reference.

Complete some problems each week. Do not wait until the end of summer to complete the packet. This will allow you to maintain and improve your skills and help you to be successful next year.

All work should be **completed and turned in during the first week of school**. This packet will count as a **15-point assignment with five points awarded per trimester**.

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Name: _____

Date _____

Sets Of Numbers

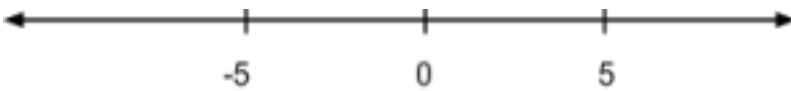
Counting Numbers - are the Natural Numbers (1, 2, 3, 4 ...)

Whole Numbers - all the Counting Numbers AND zero (0, 1, 2, 3, 4, ...)

Integers - all the Whole Numbers AND their opposites (...,-4, -3, -2, -1, 0, 1, 2, 3, 4, ...)

Opposite numbers are the same distance from zero on a number line in opposite directions.

For example 5 and -5 are opposites.



Comparing Integers : > and <

The number farther right on the number line is the larger number.

1) 15 _____ -15

2) 92 _____ 63

3) 0 _____ 12

4) -5 _____ 0

5) -5 _____ -18

6) -25 _____ -18

Ordering Integers:

6) Order from least to greatest: 6, -5, 3, -9, 0, -3

7) Name a number that is not an integer? _____

8) Name the largest negative integer. _____

9) Name the smallest positive integer. _____

Absolute Value measures the distance a number is from zero on the number line. The symbol for absolute value is “| |.”

|4| “What is the absolute value of 4?” |4| = _____

|-4| “What is the absolute value of -4?” |-4| = _____

Absolute value bars are evaluated like parentheses. Do whatever is inside the bars first, and then find the absolute value.

Example:

$$|-4| + |5| \quad |-4 + 5|$$

$$4 + 5 \quad |1|$$

$$9 \quad 1$$

Try these. Remember to do the absolute value of each number before the operation.

10) $ 102 - -2 $	11) $ 102 - 2 $	12) $ 102 - -2 $
13) $ 102 - 2 $	14) $- 10 - -2 $	15) $- (102 - 2)$

The negative symbol “-” means **opposite**. For example the “opposite of 4” is -4.16)

What is the opposite of -6 ? _____

Simplify the expression. (Start from the inside and work toward the outside.)

17) $-(-4)$ _____	18) $-(-(-4))$ _____	19) $-[-(-(-4))]$
20) $-(-(-36 - 4))$	21) $-(3^2)$	22) -3^2

ADDING INTEGERS

SAME SIGNS, ADD the numbers and **KEEP** the sign. **DIFFERENT** signs **IGNORE** the signs and **SUBTRACT** numbers. Keep the sign of whatever you have more of. Subtract the absolute values. Keep the sign of the number with the largest absolute value.

Examples: $-14 + -3 = -17$

$12 + -8 = 4$

$-37 + 16 = 21$

1) $12 + 20 =$ _____	2) $-12 + -20 =$ _____	3) $-12 + 20 =$ _____
4) $12 + -20 =$ _____	5) $20 + -10 + 5 =$ _____	6) $-15 + 7 + 8 =$ _____

SUBTRACTING INTEGERS

FOLLOW the RULES for ADDING INTEGERS but BEWARE OF DOUBLE NEGATIVES!!!!
Remember (-) means opposite AND the sign in front of the number goes with the number.

Ex: $7 - 4 = 3$ $-7 - 4 = -11$ $8 - -4 = 12$ $8 + -4 = 4$ $3 - -11 = 14$ $8 - 4 = 4$

Remember to "add the opposite!"

7) $27 - 19$	8) $5 - 8$	9) $0 - -14$	10) $-21 - (-14)$
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11) $-5 - 3$	12) $-6 - -8$	13) $7 - 13$	14) $-13 - -1$
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MULTIPLYING and DIVIDING INTEGERS:

TWO SAME SIGNS your answer will be **POSITIVE**.

Ex:

$5(4) = 20$	$-5(-4) = 20$	$18 \div 3 = 6$	$-18 \div -3 = 6$
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TWO DIFFERENT SIGNS your answer will be **NEGATIVE**.

Ex:

$-9(2) = -18$	$9(-2) = -18$	$-18 \div 9 = -2$	$18 \div -9 = -2$
15) $(100)(-7)$	16) $(-6)(13)$	17) $-9(-11)$	
18) $(-15)(7)$	19) $-144 \div 12$	20) $62 \div 2$	
21) $-150 \div 30$	22) $-90 \div -15$	23) $-40 \div 5$	

Write a number sentence and evaluate.

1) A dolphin swam to a depth of 110 feet below sea level. Then, it rose 85 feet. What was the dolphin's final depth?

2) The temperature outside was 22°F . The wind chill made it feel like -8°F . Find the difference between the real temperature and the apparent temperature.

3) The temperature one morning in was -16°F . By the afternoon, the temperature had risen 9°F . What was the temperature in the afternoon?

FRACTIONS

4) Write $3\frac{2}{5}$ as a mixed number. _____ 5) Write $32\frac{2}{4}$ as a mixed number. _____

Write each ratio as a FRACTION in SIMPLEST FORM.

8) $\frac{3}{12}$ _____

9) 20 to 5 _____

10) 30 : 18 _____

11) A bag contains 6 peaches, 4 plums, and 3 bananas. What is the ratio of plums to peaches?

12) A bag contains 5 red marbles, 7 blue marbles, and 3 green marbles. What is the ratio of blue marbles to the number of marbles in the bag?

Adding and Subtracting Fractions

-Remember to use your integer rules.

-Find the Least Common Denominator (LCD) if the denominators are different.

-Add or subtract the numerator and keep the denominator the same.

13) $\frac{4}{8} + \frac{3}{8}$

14) $-\frac{11}{8} + \frac{4}{18}$

15) $-\frac{5}{13} + (-\frac{3}{13})$

16) $\frac{2}{9} - (-\frac{3}{9})$	17) $\frac{3}{5} + \frac{2}{15}$	18) $-\frac{2}{5} + (-\frac{5}{6})$
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Multiplying Fractions

-Use your integer rules to determine whether your answer is going to be positive or negative.

-Change any mixed numbers to improper fractions (if necessary).

-Multiply the numerators and multiply the denominators. Look to simplify before you multiply. -State your final answer in simplest form (fraction or mixed number).

1) $-\frac{9}{10} \cdot \frac{2}{3}$	2) $-\frac{5}{6} \cdot -1\frac{4}{5}$	3) $2\frac{3}{8} \cdot 1\frac{2}{8}$
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Dividing Fractions & Mixed Numbers

-To divide fractions, multiply the first fraction by the multiplicative inverse (reciprocal) of the second fraction. You can use the key words “keep, change, flip” to help you remember the steps of this process.

4) $-\frac{2}{3} \div \frac{5}{6}$	5) $\frac{4}{5} \div -6$	6) $7\frac{1}{2} \div 2\frac{1}{10}$
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Find the multiplicative inverse (reciprocal) of each fraction.

7) $\frac{4}{7}$	8) $\frac{2}{11}$
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Decimals

Round each of the following to the specified place.

1) 58.6857 Nearest Whole: _____

2) 4.0999 Nearest Whole: _____

3) 58.6857 Tenths: _____

4) 4.0999 Tenths: _____

Using $<$, $>$ or $=$, compare the following.

1) 0.0604 _____ 0.062

2) -2.0 _____ -2.8

3) 3.3 _____ 3.25

Change into a decimal.

6) $\frac{3}{8}$ _____

7) $5\frac{2}{3}$ _____

8) $3\frac{1}{4}$ _____

Change into fraction or mixed number.

9) 0.5 _____

10) 4.6 _____

11) 3.75

Adding and Subtracting Decimals

-Always line up decimals, add zeroes to help line things up.

-Add and subtract but remember to carry over or borrow if necessary.

-Bring decimal straight down in your answers.

1) $3.72 - 0.55$	2) $-2.34 - 0.4$
3) $-5.44 + 12.2$	4) $0.34 + 3.27$

Multiplying Decimals

-Multiply the number like you would whole numbers, carry over when necessary.

-Count the number of decimal spaces for the original two factors.

-The decimal places in the product is the sum of decimal places in the factors.

5) $-2.4 \cdot (-2.3)$	6) $0.4 \cdot (-1.6)$
7) $0.24 \cdot (2.2)$	8) $1.14 \cdot (0.83)$

Dividing Decimals

-Move the decimal right in the dividend the same amount it's moved in the divisor

-Rewrite the problem as two integers

-Bring the decimal point up on top of quotient **quotient** -Do normal division

add zeroes if needed **divisor dividend**

9) $-5.4 \div 9$	10) $3.96 \div 0.6$
11) $-4.8 \div (-2.2)$	12) $0.96 \div 0.02$

13) List the following numbers in order from least to greatest: 6.6, 6.75, 6.07, 6.7

Evaluate each expression when $a = 2$, $b = -3$, and $c = 4$

14) $4a + c$	15) $2b - 3c$
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Evaluate each expression when $x = 1.4$ and $y = -0.6$

16) $x - y$	17) $3x + 2y$
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Evaluate using the correct order of operations.

18) $25 - 5 \div 4 =$	19) $13 + 15 \div 5 \bullet 2 - 4 =$
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Translate each verbal phrase or sentence into an algebraic expression.

- 1) 12 more than a number n _____
- 2) A number, n , increased by seven _____
- 3) The product of 15 and x _____
- 4) Twice y decreased by 20 _____
- 5) Seven more than the quotient of x and -2 . _____
- 6) The difference of twice n and three _____
- 7) Three times the sum of 12 and x _____

Simplify Expressions

-Get rid of parentheses by using the Distributive Property

-Combine like terms if they have the same variable raised to the same power -Look at the coefficient and use you integer rules or just combine the constant terms

List the terms, like terms, coefficient(s), and constant(s) for the following expressions.

$$5x + 2y - x + 3y - 7$$

Terms: _____, _____, _____, _____, _____

Like Terms: _____ and _____; _____ and _____

Coefficient(s): _____, _____, _____, _____

Constant(s): _____

$$-4a - 10b + 8 - 2a + 7$$

Terms: _____, _____, _____, _____, _____

Like Terms: _____ and _____; _____ and _____

Coefficient(s): _____, _____, _____

Constant(s): _____, _____

- 1) Four more than a number, n , is no more than thirteen. _____
- 2) The difference of a number, n , and -6 is less than 9. _____
- 3) A number, n , decreased by 11 is no less than 17. _____
- 4) Nine more than 4 times a number **is at least** 30. _____
- 5) Three times a number divided by 4 **is no more than** 5. _____
- 6) The sum of twice a number, n , and 9 **is less than** 37. _____
- 7) Six times the difference of a number, x and 3 **is more than** 24. _____

- 8) Four times a number, x plus nine is **at most** 30. _____
- 9) Three times a number, x minus 4 is **no more than** 5. _____
- 10) Three times a number, x , increased by 5 is **at least** -13. _____
- 11) A number, x , divided by -5 is **greater than** 8. _____

Find the cost per item.

20 pounds of pet food for \$14.99	50 pounds of pet food for \$37.99
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Find the MEAN, MEDIAN, MODE, and RANGE of the following set of data:

Show all work. 15, 12, 21, 18, 25, 11, 17, 19, 20

Remember to put the data in order from least to greatest first!

MEAN	MEDIAN
MODE	RANGE