

**SPSG Summer Math Reinforcement Packet Created for Students Entering into
SPSG 8th Grade Algebra 1 in the Fall 2023**

Dear Students and Parents: The purpose of a summer math packet is to review math concepts that are often forgotten during the long break from school. Most of the concepts in this packet were covered in 7th grade.

- Your completed packet will be checked for effort and completion during the first week of school.
- Please show all your work (when possible) to earn full effort credit.
- PLEASE DO NOT USE A CALCULATOR TO COMPLETE ANY OF THE WORK.
- A parent's signature will be required to earn a full effort/completion grade.
- Please pace yourself... completing 10 – 15 problems per week is a perfect pace.

An additional review tool to use is IXL, an online math program, which focuses on skills for the upcoming year. 30-minute practice sessions each week are very beneficial.

Have a wonderful summer!

The SPSG Math Department

Student's First Name: _____ Last Name: _____

The work in this packet was completed independently (without a calculator) by my daughter.

Parent Signature: _____ Date: _____

Section 1: For this section, add, subtract, multiply, or divide the integers. Use the examples to assist. Be sure to show any necessary work and circle your final answer.

Subtracting Integers:	"K"-C-C"	Example:	$-2 - 4$
K - Keep the sign of the first number			$-2 - 4$
C - Change the operation to addition			$-2 + 4$
C - Change the sign of the second number			$-2 + (-4)$
Then, follow the rules of addition.			$= -6$

<u>SAME signs:</u> Multiply/divide like normal. The sign is always positive .	
<i>Examples:</i>	$(-2)(-7) = 14$ $-27/-9 = 3$
<u>DIFFERENT signs:</u> Multiply/divide like normal. The sign is always negative .	
<i>Examples:</i>	$(-4)(3) = -12$ $10/-2 = -5$

1. $(-5) - (13) =$

7. $22 - (-27) =$

2. $(12) - (13) =$

8. $-6 \cdot 5 =$

3. $(7) - (-15) =$

9. $-2 \cdot -5 =$

4. $-(-20) =$

10. $-63 \div -7 =$

5. $(-56) - (34) =$

11. $-72 \div 9 =$

6. $(-5) - (54) =$

12. $-5 \div -5 =$

Section 2: For this section, add, subtract, multiply, or divide the fractions. Use the notes to assist. Be sure to show any necessary work and circle your final answer.

There are 3 simple steps to add/subtract fractions:

- **Step 1:** Make sure the bottom numbers (the denominators) are the same. If not, you must find a common denominator by using a previously learned method.
- **Step 2:** Add/subtract the top numbers (the numerators) and put the answer over the denominator.
- **Step 3:** Simplify the fraction (if needed).

To multiply fractions:

Step 1: Multiply the numerators of the fractions to get the new numerator.

Step 2: Multiply the denominators of the fractions to get the new denominator.

Step 3: Simplify the fractions if they are not already in lowest terms.

To divide any number by a fraction:

Step 1: Keep the first fraction the same.

Step 2: Change the division sign to a multiplication sign.

Step 3: Take the reciprocal of the second fraction.

Step 4: Multiply across and simplify your answer.

1. $\frac{4}{5} + \frac{1}{3} =$

6. $\frac{4}{5} \cdot \frac{1}{3} =$

2. $\frac{3}{4} + \frac{1}{10} =$

7. $\frac{3}{4} \cdot \frac{1}{10} =$

3. $\frac{1}{2} - \frac{1}{3} =$

8. $\frac{4}{5} \div \frac{1}{3} =$

4. $\frac{5}{6} - \frac{2}{9} =$

9. $\frac{4}{5} + \frac{1}{3} =$

5. $\frac{4}{5} + \frac{1}{3} =$

10. $\frac{3}{4} \div \frac{1}{10} =$

Section 3: Solve the following equations for the unknown variable. Make sure to show all your work and circle your final answer.

1. $-5x + 9 = -16$

5. $-5(3d + 8) = 35$

2. $8(7 + 7) = 16$

6. $\frac{p-16}{5} = p + 4$

3. $\frac{x}{6} - 6 = -10$

7. $8(2x - 1) = 3(16 + 3x)$

4. $3d + 22 = 8d$

8. $\frac{4}{2(m-13)} = 1$



1 Readiness Assessment

1. Which list shows numbers ordered from least to greatest?

(A) $1.01, \frac{21}{19}, 1.\overline{01}$
(B) $\frac{21}{19}, 1.01, 1.\overline{01}$
(C) $1.01, 1.\overline{01}, \frac{21}{19}$
(D) $1.\overline{01}, 1.01, \frac{21}{19}$

2. Which statement is true?

(A) $-17 > -20$
(B) $\frac{1}{2} = \frac{8}{4}$
(C) $8.01 < 8.001$
(D) $-\frac{2}{3} < -6$

3. Which statement about the number -3 is true? Select all that apply.

(A) It is a natural number.
(B) It is a whole number.
(C) It is an integer.
(D) It is a rational number.
(E) It is an irrational number.

4. Which statement is true?

(A) All integers are whole numbers.
(B) All whole numbers are natural numbers.
(C) Some rational numbers are integers.
(D) Some irrational numbers are rational numbers.

5. Solve $h - 104 = 7$.

6. If $\frac{k}{3} - 9 = 12$, what is the value of k ?

(A) 1
(B) 7
(C) 9
(D) 63

7. Which properties can be used to solve $7y - 15 = -29$? Select all that apply.

(A) Identity Property of Multiplication
(B) Addition Property of Equality
(C) Distributive Property
(D) Inverse Property of Multiplication
(E) Commutative Property of Addition

8. Where is $\sqrt{95}$ located on a number line?

(A) between 7 and 8
(B) between 8 and 9
(C) between 9 and 10
(D) between 10 and 11

9. Simplify $|-3 - 8|$.

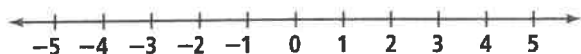
10. Which of the following is equivalent to the expression $|-24 + 2| - 10$?

- (A) -32
- (B) -12
- (C) 12
- (D) 32

11. Evaluate $|2\frac{5}{6} + y|$ for $y = \frac{7}{4}$.

- (A) $2\frac{2}{5}$
- (B) $3\frac{1}{5}$
- (C) $3\frac{4}{5}$
- (D) $4\frac{7}{12}$

12. Solve and graph the solution to $x + 1 < 5$.



13. Which expression is equivalent to $\frac{1}{3}x(9y - 12)$?

- (A) $3xy - 4$
- (B) $3xy - 4x$
- (C) $3xy - 12$
- (D) $3y - 4x$

14. Which of the following statements is true if $x = -2$ and $y = 8$? Select all that apply.

- (A) $|x| \leq |y|$
- (B) $|y| \geq |x|$
- (C) $|x| > |y|$
- (D) $|y| < |x|$

15. Which expression is equivalent to the sum of x and five divided by twelve?

- (A) $\frac{x+5}{12}$
- (B) $\frac{x}{5+12}$
- (C) $x + \frac{5}{12}$
- (D) $\frac{x}{5} + 12$

16. What is the value of $|-8/9|$?

17. What unit of time will make the statement true?

$$\text{seconds} + \frac{\text{seconds}}{?} \cdot \text{day} = \text{seconds}$$

18. If $C = 2\pi r$ and $C = 24$, what is the value of r ?

- (A) $r = 12\pi$
- (B) $r = \frac{24}{2\pi}$
- (C) $r = 48\pi$
- (D) $r = \frac{48}{\pi}$