Summer Math Packet

Entering PRE-ALGEBRA 8th Grade

How should you use the materials provided?

1. ALL STUDENTS must prepare for MULTIPLICATION FACT FLUENCY. Complete at least 3 pages to show your fluency and prove to yourself you can get the required score for your grade level.

2. Take the PRETEST and use the attached answer key to check your work.
   - If you DID WELL, use the portions of the summer math packet you need to help you prepare. QR codes and sample problems are available to help you practice.
   - If you DID NOT do well, complete the whole summer math packet and use this as an opportunity to STRENGTHEN your foundation. QR codes and sample problems are available to help you practice.

3. Upon returning to school, you will have a brief review of these concepts with your teacher and then take a SUMMER MATH QUIZ. This will be your first quiz grade of the year.

Please use this summer to freshen up your math skills! Come ready for a great year of learning!

Sincerely,

PBS Middle Math Department

Pretest

Student: _____	**Instructor:** Holly LeBlanc	**Assignment:** Summer Math Packet Practice Quiz
Date: _____	**Course:** Pre-Algebra 2025 - 2026	

1. Add and simplify.

$\frac{1}{2}+\frac{3}{8}$

$\frac{1}{2}+\frac{3}{8}=$ [ ] (Type an integer or a fraction.)

2. Decide whether the number is a solution of the equation.

Is 5 a solution of $6f=35-f$?

- ○ Yes
- ○ No

3. Solve the equation. First combine any like terms on each side of the equation.

$x-5=-3+6$

The solution is $x=$ [ ].

4. Write the following phrase as a variable expression. Use x to represent "a number."

the sum of a number and sixteen

The variable expression is [ ].

5. Evaluate $2 \cdot 3^4$.

$2 \cdot 3^4=$ [ ]

6. Multiply.

$$\begin{array}{r} 0.256 \\ \times 0.6 \\ \hline \end{array}$$

The product is [ ]. (Simplify your answer. Type an integer or a decimal.)

7. Evaluate the following expression for $x=7$.

$3x^2-4x+7$

$3x^2-4x+7=$ [ ]
(Simplify your answer.)

8. Evaluate 3^6.

$3^6=$ [ ]

9. Solve. Check your solution.

$-23+21=m-1$

$m=$ [ ]

10. Multiply.

$2(10x)$

$2(10x) =$ ☐

11. Simplify.

$18 \div 9 \cdot 2 + 4$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** $18 \div 9 \cdot 2 + 4 =$ ☐

○ **B.** The expression is undefined.

12. Add. Find an exact sum and an estimated sum.

$$\begin{array}{r} 3\frac{2}{15} \\ +\,1\frac{8}{15} \\ \hline \end{array}$$

The exact answer is ☐.
(Simplify your answer. Type an integer, proper fraction, or mixed number.)

Find the estimated answer by rounding each mixed number to the nearest integer and then adding the integers.

An estimated answer is ☐.

13. Subtract.

$$\frac{7}{11} - \frac{3}{11}$$

$\frac{7}{11} - \frac{3}{11} =$ ☐ (Type an integer or fraction.)

14. Simplify.

$23 + 4 \cdot 6$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** $23 \div 4 \cdot 6 =$ ☐

○ **B.** The expression is undefined.

15. Find the sum and write it in lowest terms.

$$\begin{array}{r} 4\frac{1}{2} \\ +\,2\frac{1}{4} \\ \hline = \end{array}$$

$$\begin{array}{r} 4\frac{1}{2} \\ +\,2\frac{1}{4} \\ \hline = \square \end{array}$$

(Simplify your answer. Type an integer, fraction, or a mixed number.)

16. Multiply. Write the product in simplest form.

$$\frac{2}{7} \cdot \frac{6}{11}$$

$\frac{2}{7} \cdot \frac{6}{11} = \square$

17. Evaluate the expression for $z = 6$.

$$2 + 3z$$

$2 + 3z =$ ☐ (Simplify your answer.)

18. Evaluate the expression for $x = 2$ and $z = 4$.

$$3x - z$$

$3x - z =$ ☐ (Simplify your answer.)

19. Subtract and check.

$$12.8 - 8.4$$

$12.8 - 8.4 =$ ☐ (Simplify your answer. Type an integer or a decimal.)

Check using this answer key.

1. $\frac{7}{8}$

2. Yes

3. 8

4. x + 16

5. 162

6. 0.1536

7. 126

8. 729

9. − 1

10. 20x

11. A. 18 ÷ 9 • 2 + 4 = **8**

12. $4\frac{2}{3}$

    5

13. $\frac{4}{11}$

14. A. 23 ÷ 4 • 6 = **47**

15. $6\frac{3}{4}$

16. $\frac{12}{77}$

17. 20

18. 2

Summer Packet: Pre-Algebra College Prep

Students Entering 8th Grade Pre-Algebra

Purpose: This packet is designed to help students stay on track over the summer and enter Pre-Algebra confident and prepared for a great school year. Math teachers have selected 6 skills that are important for the students' success in Pre-Algebra. If a student struggles with these concepts, we highly recommend that they watch the instructional videos provided and review the notes provided. The instructional videos are available by scanning the QR code with a smart phone. The instructional videos are all through Khan Academy, a website that provides great instructional videos and practice for math concepts. After watching the video, students can choose to continue watching videos for extra help or work problems live on the site and get immediate feedback on whether their solution is correct. Watching videos and online practice is not required but may prove beneficial for students that often struggle in math or lose skills over the summer. All pages of this packet should be completed for the first day of school. **SHOW ALL WORK TO RECEIVE CREDIT.**

Concept 1: Exponents and Order of Operations

Directions: Solve each problem showing all steps (your thoughts) and circle your answer. Simplify your answer when possible. NO CALCULATOR

1. 8^2

2. $\frac{5(6^2-3)}{3^2+2}$

3. $21-[\,2^4-(7-5)-10]+8\cdot 2$

4. $5\cdot 9^2$

5. 9^2-4^2

6. $\frac{4\cdot 8-1\cdot 11}{3(9-2^3)}$

Concept 2: Variables, Algebraic Expressions, and Equations

Directions: Solve each problem showing all steps and circle your answer. Simplify your answer when possible. NO CALCULATOR

1. Evaluate when x=5, y=0, and z=2.
   $x^3 - 2z$ $4x - 3$

2. Translate each phrase into a variable expression. Use "x" to represent a number.

   a. Five subtracted from a number

   b. The product of five and a number

   c. Seven more than a number

3. Decide whether a given number is the solution of a given equation. Prove your reasoning.

   a. Is 5 a solution of n + 12 = 20 – 3? Prove it.

   b. Is 14 a solution of 30 = 3(n-3)? Prove it.

4. Solve the equation using inverse operations and the Property of Equality. Show your work, do NOT use a calculator.

a. 7n = 77 b. n – 25 = 150 c. 5(n+4) = 90

Concept 3: Adding, Subtracting, Multiplying, and Dividing with Integers

Directions: Solve each problem and show your work or thoughts.

1. $-3 - 1$
2. $-2+9$
3. $125 - (-103)$
4. $100 \div -5$

5. $-7 \times -3 \times 2$
6. $-144 \div -12 + 3$
7. $(-6) + (-14) \times 2$

8. $13 + 20 + (-17) + (-13)$
9. $(-12) - (-11)$
10. $(-126) \div 9 + 3$

Concept 4: Simplifying and Solving Equations by combining like terms and using inverse operations.

Directions: Solve each problem showing all steps and circle your answer. Simplify your answer when possible. NO CALCULATOR

1. Simplify: $8a + a - 7 - 15a$
2. Simplify: $7x + 3(x - 4) + x$
3. Simplify: $-(3m + 2) - m - 10$
4. Simplify: $10 - x + 5x - 12 - 3x$
5. Solve: $7y - 6y = 100 - 105$
6. Solve: $7x + 5 - 6x = -20$
7. Solve: $c - 5 = -13 + 7$
8. Solve: $-14 = 9y + 4$

Concept 5: Adding, subtracting, multiplying, and dividing with fractions
Directions: Solve each problem showing all steps and circle your answer. Simplify your answer when possible. NO CALCULATOR

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

2. $2\frac{5}{8} - 1\frac{2}{4} =$

3. $\frac{11}{12} \times \frac{2}{4} =$

4. $3\frac{15}{20} \div \frac{4}{5} =$

5. $4\frac{1}{3} + 2\frac{2}{6} + \frac{4}{12} - \frac{3}{4} =$

6. $3\frac{1}{3} \times \frac{2}{6} \times \frac{4}{12} \div \frac{3}{4} =$

7. $\frac{1}{4} + \frac{3}{24} + \frac{7}{8} - \frac{1}{2}$

8. $2\frac{3}{8} + \frac{2}{20} - 1\frac{1}{5}$

Concept 6: Adding, subtracting, multiplying, and dividing with decimals
Directions: Solve each problem showing all steps and circle your answer. Simplify your answer when possible. NO CALCULATOR

1. $4.2 \times 3.8 =$

2. $3 - 1.78 =$

3. $4.82 \div 4 =$

4. $4.3 + 2.6 + 3.72$

5. $26 \div 3.2$

6. $\frac{16.8}{4.2} =$

7. $16.2 + 7.58 - 3.6 - 1.4 =$

8. $5.5 \times 3 \times 2.5 \div 1.5 =$

9. $6.1 \times 4 + 2.6$

10. $250 \div 12.5 + 7.3$

Summer Fluency Practice

Directions: You should be fluent in operations with integers. You should be able to complete this worksheet in two minutes to be considered fluent. I have attached two additional practice worksheets (only this one must be completed for credit). You will take a timed test on integers within the first month of school.

$9 - 6 =$	$(-5) + 7 =$	$(-9) + (-2) =$
$7 - (-2) =$	$(-2) + 2 =$	$(-8) - 1 =$
$5 - (-1) =$	$2 + 1 =$	$7 + 1 =$
$15 \div 3 =$	$8 \div (-4) =$	$(-4) - 4 =$
$9 \times (-8) =$	$25 \div (-5) =$	$1 + 7 =$
$4 \div 2 =$	$(-6) \times (-1) =$	$5 \times 6 =$
$16 \div 2 =$	$5 + 5 =$	$(-5) \times (-2) =$
$6 \times (-8) =$	$9 + (-7) =$	$(-27) \div (-3) =$
$9 - 1 =$	$4 \times (-7) =$	$(-2) - 7 =$
$3 + 4 =$	$(-6) - (-1) =$	$5 - (-4) =$

$5 + 4 =$	$(-24) \div 8 =$	$(-9) \div (-1) =$
$(-10) \div 5 =$	$63 \div (-9) =$	$(-6) \div (-6) =$
$(-25) \div (-5) =$	$(-6) \div 3 =$	$4 - (-9) =$
$(-3) - (-1) =$	$2 \times 2 =$	$6 + (-1) =$
$1 + 8 =$	$(-6) \times (-6) =$	$8 \div (-1) =$
$5 \div (-5) =$	$3 \div 3 =$	$(-2) + 1 =$
$9 - 2 =$	$3 - (-3) =$	$9 \times (-9) =$
$6 \times (-3) =$	$4 + 4 =$	$8 \times (-4) =$
$(-6) + (-6) =$	$(-8) - 3 =$	$(-5) \times (-9) =$
$5 \div (-6) =$	$(-4) \div (-1) =$	$(-2) + (-7) =$

$7 \times 6 =$	$(-4) + (-9) =$	$24 \div 6 =$
$(-7) + 2 =$	$21 \div (-7) =$	$(-8) \times (-8) =$
$(-35) \div 7 =$	$(-8) - (-6) =$	$(-9) + (-4) =$
$6 + 4 =$	$(-5) + (-2) =$	$2 + (-9) =$
$4 \times 5 =$	$3 - 7 =$	$(-5) - 6 =$
$9 - 3 =$	$(-1) - (-5) =$	$(-3) - 1 =$
$(-6) + (-9) =$	$5 - 2 =$	$56 \div (-8) =$
$(-72) \div (-8) =$	$(-8) \times (-1) =$	$16 \div (-2) =$
$14 \div 2 =$	$6 + (-8) =$	$28 \div (-7) =$
$(-7) - (-4) =$	$(-9) \times (-6) =$	$6 \div (-1) =$

QR CODES:

Each QR code links to a video lesson on Khan Academy. At the top of the web page, you will notice you have the option to watch additional videos or do practice problems for extra help.

Adding and Subtracting Fractions

Dividing Fractions

Adding Decimals

Subtracting Decimals

Multiplying Decimals

Dividing Decimals

Solving one-step equations

Changing numeric and verbal expressions

Adding and subtracting Integers

Multiplying and Dividing Integers

Combining Like Terms

OPTIONAL: Integer Operation Practice Game: Students should be fluent with adding, subtracting, multiplying, and dividing with integers. This will direct you to a game that is easy to practice integers.

Link: http://www.hoodamath.com/mobile/games/integerstimedtests.html

QR Code: