

Summer Packet 2021: Pre-Algebra College Prep ***

Students Entering 7th or 8th Grade Pre-Algebra

Purpose: This packet is designed to help students stay on track over the summer and enter 7th grade 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, I 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 with *** 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

4. $5 \cdot 9^2$

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

5. $9^2 - 4^2$

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

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 $n + 12 = 20 - 3$?

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

4. Solve the equation using inverse operations. 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: Properties

Directions: Complete the chart.

Property	Definition	Example
1. Commutative Property of Addition		
2. Commutative Property of Multiplication		
3. Associative Property of Addition		
4. Associative Property of Multiplication		
5. Additive Identity		
6. Multiplicative Identity		
7. Multiplicative Property of Zero		

Directions: Name the property shown by each statement.

8. $(a \times 6) \times 5 = a \times (6 \times 5)$

9. $3 + 7 + 9 = 7 + 3 + 9$

10. $0 \times 12 = 0$

11. $1,272 \times 1 = 1,272$

12. $15 + 0 = 15$

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

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

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

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

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

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

2. $3 - 1.78 =$

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

3. $4.82 \div 4 =$

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

4. $4.3 + 2.6 + 3.72$

9. $6.1 \times 4 + 2.6$

5. $26 \div 3.2$

10. $250 \div 12.5 + 7.3$

Summer Vocabulary Words ***

Directions: Use www.mathwords.com to define the following vocabulary words. These are words I expect you to be able to use fluently in class this year.

WORD	Definition
1. Inverse Operation	
2. Order of Operations	
3. Algebraic Expressions	
4. Numerical Expressions	
5. Variable	
6. Coordinate Plane	
7. x-axis	
8. y-axis	
9. Coordinate	
10. Evaluate	
11. Equation	
12. Integers	

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.

$9 - 6 =$

$(-5) + 7 =$

$(-9) + (-2) =$

$7 - (-2) =$

$(-2) + 2 =$

$(-8) - 1 =$

$5 - (-1) =$

$2 + 1 =$

$7 + 1 =$

$15 \div 3 =$

$8 \div (-4) =$

$(-4) - 4 =$

$9 \times (-8) =$

$25 \div (-5) =$

$1 + 7 =$

$4 \div 2 =$

$(-6) \times (-1) =$

$5 \times 6 =$

$16 \div 2 =$

$5 + 5 =$

$(-5) \times (-2) =$

$6 \times (-8) =$

$9 + (-7) =$

$(-27) \div (-3) =$

$9 - 1 =$

$4 \times (-7) =$

$(-2) - 7 =$

$3 + 4 =$

$(-6) - (-1) =$

$5 - (-4) =$

$5 + 4 =$

$(-24) \div 8 =$

$(-9) \div (-1) =$

$(-10) \div 5 =$

$63 \div (-9) =$

$(-6) \div (-6) =$

$(-25) \div (-5) =$

$(-6) \div 3 =$

$4 - (-9) =$

$(-3) - (-1) =$

$2 \times 2 =$

$6 + (-1) =$

$1 + 8 =$

$(-6) \times (-6) =$

$8 \div (-1) =$

$5 \div (-5) =$

$3 \div 3 =$

$(-2) + 1 =$

$9 - 2 =$

$3 - (-3) =$

$9 \times (-9) =$

$6 \times (-3) =$

$4 + 4 =$

$8 \times (-4) =$

$(-6) + (-6) =$

$(-8) - 3 =$

$(-5) \times (-9) =$

$5 + (-6) =$

$(-4) \div (-1) =$

$(-2) + (-7) =$

$7 \times 6 =$

$(-4) + (-9) =$

$24 \div 6 =$

$(-7) + 2 =$

$21 \div (-7) =$

$(-8) \times (-8) =$

$(-35) \div 7 =$

$(-8) - (-6) =$

$(-9) + (-4) =$

$6 + 4 =$

$(-5) + (-2) =$

$2 + (-9) =$

$4 \times 5 =$

$3 - 7 =$

$(-5) - 6 =$

$9 - 3 =$

$(-1) - (-5) =$

$(-3) - 1 =$

$(-6) + (-9) =$

$5 - 2 =$

$56 \div (-8) =$

$(-72) \div (-8) =$

$(-8) \times (-1) =$

$16 \div (-2) =$

$14 \div 2 =$

$6 + (-8) =$

$28 \div (-7) =$

$(-7) - (-4) =$

$(-9) \times (-6) =$

$6 \div (-1) =$

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



Associative and Commutative Property



Solving one-step equations



Changing numeric and verbal expressions



Adding and subtracting Integers



Multiplying and Dividing Integers



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:

