

FOR STUDENTS WHO HAVE COMPLETED PRE-ALGEBRA
(Students entering Algebra 1)

Name: _____

Date: _____ Period: _____

Dear Parent/Guardian & Algebra I Student,

Next school year, your child will be taking Algebra 1 and will need core prerequisite skills from Pre-Algebra upon the start of school. You will find a review packet of skills which each child is expected to know upon the start of the year. Students will be given a test (no calculators) on this information during the second week of the school year. Teachers will go over the answers from the packet during the first week of school and minimal direct instruction will occur on these concepts, as they are a review from Pre-Algebra. Students may seek additional help during recap to ask questions.

Topics from Pre-Algebra to be tested during the second week of school.

- Integers
- Decimals
- Fractions
- Real Numbers
- Order of Operations

You may also access the following websites to assist your child.

www.purplemath.com

www.math.com

www.khanacademy.com

It is recommended that students who score between 80 and 100 continue with the current course. Students who score below an 80 may consider retaking Pre-Algebra, as it is imperative for future successes in math to have essential, baseline skills.

**PLEASE SHOW ALL WORK. STUDENTS SHOULD NOT USE A
CALCULATOR FOR THIS PACKET.**

Have a great summer.

The PAMS Math Department

Rules: ** If a number has no sign it means it is a positive number. **

Addition

SAME SIGNS

- 1) Add their absolute values.
- 2) Keep the common signs.

$$-4 + (-5) = -(4 + 5) = -9 \qquad 4 + 5 = 9$$

OPPOSITE SIGNS

- 1) Subtract the smaller absolute value from the larger absolute value.
- 2) Keep the sign of the number with the larger absolute value.

$$3 + (-9) = -(9 - 3) = -6 \qquad -3 + 9 = +(9 - 3) = 6$$

Subtraction

- 1) Adding the opposite of a number is equivalent to subtracting the number.
- 2) Change all problems to addition and follow the addition rules.

$$3 - 12 = 3 + (-12) = -(12 - 3) = -9$$

$$-7 - 1 = -7 + (-1) = -(7 + 1) = -8$$

$$-4 - (-10) = -4 + 10 = +(10 - 4) = 6$$

$$12 - (-8) = 12 + 8 = 20$$

NO CALCULATOR!

1. $7 + (-9) =$	2. $-12 + 15 =$
3. $2 - 4 =$	4. $12 - 19 =$
5. $-7 - (-5) =$	6. $7 + 27 =$
7. $-12 - (-4) =$	8. $0 - 8 =$
9. $0 - (-6) =$	10. $-8 - 2 =$
11. $-3 + 1 =$	12. $-7 + (-5) =$
13. $-9 - (-13) + (-4) =$	14. $-6 - 4 - (-8) =$
15. $25 - 21 + (-20) =$	16. $-39 - (-32) - 14 =$

Rules:

- 1) If two numbers have the same sign, their product or quotient is positive.
 $(-7)(-5) = 35$ $6 \cdot 8 = 48$
- 2) If two numbers have opposite signs, their product or quotient is negative.
 $9(-2) = -18$ $(-3)(4) = -12$

NO CALCULATOR!

1. $(-8)(3) =$	2. $(4)(-4) =$
3. $(20)(-65) =$	4. $-7 \cdot -5 =$
5. $-45 \div 9 =$	6. $\frac{-24}{-4} =$
7. $49 \div (-7) =$	8. $\frac{-99}{9} =$
9. $(5)(-2)(7) =$	10. $(-3)(-1)(4)(-6) =$
11. $-3740 \div (-10) =$	12. $\frac{56}{-7} =$
13. $(11)(-1)(-7)(-3) =$	14. $\frac{39}{13} =$
15. $(-72) \div (-12) =$	16. $(-9)(8)(-2)(5) =$

Rules:

1) Line up decimal points, if a number does not have a decimal point it is a whole number with the decimal point at the end.

2) Annex zeros to hold place.

3) Add or subtract vertically.

4) Bring down the decimal point.

$$4.1 + 3 + 5.61$$

$$4.10$$

$$3.00$$

$$5.61$$

$$16 - 7.498$$

$$16.000$$

$$\begin{array}{r} - 7.498 \\ \hline \end{array}$$

$$8.502$$

NO CALCULATOR! SHOW ALL WORK.

1. $5.1 + 2.23 + 8$	2. $9 + 3.3 + 0.781$
3. $6.7 - 3.987$	4. $5.21 + 6.5 + 8.123$
5. $9.8 - 2.0871$	6. $7.3 + 4.3 + 12 + 0.543$
7. $9.1 + 7.89 - 2.6$	8. $16 - 7.5 + 3.12$
9. $2.8 + 15 - 9.12$	10. $7.8 - 2.3 + 15$
11. $8 + 4.1 - 0.123$	12. $6.3 - 0.45 + 2.45$

Rules:

Multiplying

- 1) Line up digits, starting on the right.
- 2) Multiply
- 3) Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.

$$\begin{array}{r}
 (6.432)(4.15) \\
 6.432 \text{ (3 decimal places)} \\
 \times 4.15 \text{ (2 decimal places)} \\
 \hline
 32160 \\
 64320 \\
 \hline
 2572800 \\
 26.69280 \text{ (5 decimal places)}
 \end{array}$$

Dividing

- 1) If the divisor is not a whole number, move the decimal point to the right to make it a whole number and move the decimal point in the dividend the same number of places.
- 2) Divide.
- 3) Bring the decimal point up.

$$\begin{array}{r}
 27.216 \div 4.8 \\
 \hline
 5.67 \\
 48 \overline{)272.16} \\
 \underline{-240} \\
 321 \\
 \underline{-288} \\
 336 \\
 \underline{-336} \\
 0000
 \end{array}$$

NO CALCULATOR! SHOW ALL WORK.

1. $5.4(0.5)$	2. $5.9(0.07)$	3. $0.68 \cdot 0.14$	4. $4.29 \cdot 0.4$
5. $69.3(0.7)$	6. $9.01(0.15)$	7. $36 \cdot 3.3$	8. $36.8 \cdot 0.55$
9. $0.24 \div 0.8$	10. $84.48 \div 0.88$	11. $\frac{8.3638}{1.9}$	12. $\frac{487.2}{0.56}$
13. $34.06 \div 0.13$	14. $147 \div 0.49$	15. $\frac{9.447}{6.7}$	16. $\frac{167.4}{0.093}$

Rules:

1) Find LCD.

2) Change to equivalent fractions.

3) Rename, if needed.

4) Add or Subtract.

5) Simplify

$$3\frac{1}{9} = 3\frac{2}{18} = 2\frac{20}{18}$$

$$-1\frac{5}{6} = -1\frac{15}{18} = -1\frac{15}{18}$$

$$1\frac{5}{18}$$

$$4\frac{3}{4} = 4\frac{9}{12}$$

$$+ 5\frac{5}{6} = +5\frac{10}{12}$$

$$9\frac{19}{12} = 10\frac{7}{12}$$

NO CALCULATOR! SHOW ALL WORK.

1. $2\frac{3}{4} + 5\frac{5}{6}$	2. $9 - 4\frac{2}{5}$	3. $6\frac{1}{3} + 4\frac{3}{5}$	4. $8\frac{1}{9} - 2\frac{5}{6}$
5. $9 + 1\frac{1}{7}$	6. $6\frac{1}{2} + 2\frac{2}{3}$	7. $5\frac{1}{2} + 1\frac{3}{5}$	8. $1\frac{3}{4} - \frac{1}{2}$
9. $\frac{1}{5} + 1\frac{3}{4}$	10. $\frac{4}{5} - \frac{2}{3}$	11. $\frac{5}{7} + 1\frac{4}{5}$	12. $3\frac{5}{8} - 2\frac{1}{6}$

Rules:

- 1) Change all mixed numbers to improper fractions.
- 2) Multiplying across.
- 3) Simplify

$$2\frac{2}{3} \cdot 4\frac{1}{10} = \frac{8}{3} \cdot \frac{41}{10} = \frac{4}{3} \cdot \frac{41}{5} = \frac{164}{15} = 10\frac{14}{15}$$

- 1) Change all mixed numbers to improper fractions.
- 2) Multiply the reciprocal of the second fraction.
- 3) Simplify

$$2\frac{3}{4} \div 3\frac{1}{2} = \frac{11}{4} \div \frac{7}{2} = \frac{11}{4} \cdot \frac{2}{7} = \frac{11}{2} \cdot \frac{1}{7} = \frac{11}{14}$$

NO CALCULATOR! SHOW ALL WORK.

1. $2\frac{3}{4} \cdot 1\frac{5}{11}$	2. $9 \cdot 4\frac{2}{3}$	3. $1\frac{1}{3} \cdot 4\frac{1}{6}$	4. $1\frac{1}{9} \cdot 2\frac{2}{5}$
5. $9 \cdot 1\frac{1}{3}$	6. $6\frac{1}{2} \cdot 2\frac{1}{13}$	7. $5\frac{1}{2} \div 1\frac{3}{4}$	8. $1\frac{3}{9} \div \frac{1}{2}$
9. $\frac{1}{5} \div 1\frac{3}{4}$	10. $\frac{4}{5} \div \frac{2}{3}$	11. $\frac{9}{20} \div 1\frac{4}{5}$	12. $3\frac{2}{8} \div 2\frac{1}{6}$

Use rules of integers, decimals and fractions.

Examples:

$$-4.1 - (-2.51) = -4.1 + 2.51$$

opposite -4.10
signs +2.51
subtract -1.59

$$-1\frac{3}{4} + \left(-2\frac{5}{6}\right) = -\frac{7}{4} + \left(-\frac{17}{6}\right) = -\frac{21}{12} + \left(-\frac{34}{12}\right) = -\frac{45}{12} = -\frac{15}{4} = -3\frac{3}{4}$$

NO CALCULATOR! SHOW ALL WORK.

1. $3.98 - 6$	2. $5.8 + (-2.5)$	3. $1.8 - (-3.7)$	4. $7 + (-2.8)$
5. $(-0.8) + (-7.2) - 5.4$	6. $1.7 - (-0.8) + 4.013$	7. $-1\frac{1}{2} + 1\frac{3}{5}$	8. $-1\frac{3}{4} - \left(-\frac{1}{2}\right)$
9. $-\frac{1}{5} + 1\frac{3}{4}$	10. $\frac{2}{5} - \frac{4}{5}$	11. $\frac{5}{7} + \left(-1\frac{4}{5}\right)$	12. $-1\frac{5}{8} - 2\frac{1}{6}$

Use rules of integers, decimals and fractions.

Examples: $-4.12(-5.3)$ $\begin{array}{r} -4.12 \\ \times -5.3 \\ \hline 1236 \\ 20600 \\ \hline +21836 \end{array}$	$51 \div (-0.25)$ $\begin{array}{r} -205 \\ 225 \overline{)5100.} \\ \underline{50} \\ 100 \\ \underline{100} \end{array}$	$-2\frac{2}{3} \cdot 4\frac{1}{10} = -\frac{8}{3} \cdot \frac{41}{10} = -\frac{4}{3} \cdot \frac{41}{5} = -\frac{164}{15} = -10\frac{14}{15}$	$-2\frac{3}{4} \div -3\frac{1}{2} = -\frac{11}{4} \div -\frac{7}{2} = -\frac{11}{4} \cdot -\frac{2}{7} = \frac{11}{2} \cdot -\frac{1}{7} = \frac{11}{14}$
----------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------

NO CALCULATOR! SHOW ALL WORK.

1. -5.5×-4.87	2. $1.5(-7.1)$	3. $1.7(-3.1)$	4. -7.8×-5.1
5. $4.2 \div (-2.1)$	6. $-2 \div (-0.5)$	7. $\frac{-6.4}{0.04}$	8. $\frac{6.6}{-1.1}$
9. $-\frac{1}{5} \cdot 1\frac{3}{4}$	10. $\frac{2}{5} \cdot 1\frac{1}{4}$	11. $\frac{5}{7} \cdot (-1\frac{4}{5})$	12. $(-1\frac{5}{8})(-3\frac{1}{5})$
13. $-\frac{3}{2} \div -\frac{10}{7}$	14. $-2 \div -3\frac{4}{5}$	15. $\frac{1}{9} \div -1\frac{1}{3}$	16. $-3\frac{7}{10} \div 2\frac{1}{4}$

Parentheses (Grouping Symbols)	$[(7 - 4)^2 + 3] + 15$	$\frac{(9-7)^2 + 6}{11-6}$
Exponents	$= [3^2 + 3] + 15$	$= \frac{2^2 + 6}{5}$
Multiply or Divide, from left to right	$= [9 + 3] + 15$	$= \frac{4+6}{5}$
Add or Subtract, from left to right	$= 12 + 15$	$= \frac{10}{2}$
		$= 5$

NO CALCULATOR! SHOW ALL WORK.

1. $6 \div 3 + 2 \cdot 7$	2. $5 + 8 \cdot 2 - 4$	3. $16 \div 8 \cdot 2^2$	4. $10 \div (3 + 2) + 9$
5. $7[(18 - 6) - 6]$	6. $3(2.7 \div 0.9) - 5$	7. $6(5 - 3)^2 + 3$	8. $[10 + (5^2 \cdot 2)] \div 6$
9. $\frac{1}{3}(9 \cdot 3) + 18$	10. $\frac{1}{2} \cdot 26 - 3^2$	11. $2.5 \cdot 0.5^2 \div 5$	12. $\frac{16}{8} + 2^3 - 10$
13. $\frac{9 \cdot 2}{4 + 3^2 - 1}$	14. $\frac{13 - 4}{18 - 4^2 + 1}$	15. $\frac{5^3 \cdot 2}{1 + 6^2 - 8}$	16. $\frac{7 \cdot 4}{8 + 7^2 - 1}$

ANSWER KEY

Page 2

- | | | | |
|-------|---------|---------|---------|
| 1. -2 | 2. 3 | 3. -2 | 4. -7 |
| 5. -2 | 6. 34 | 7. -8 | 8. -8 |
| 9. 6 | 10. -10 | 11. -2 | 12. -12 |
| 13. 0 | 14. -2 | 15. -16 | 16. -21 |

Page 3

- | | | | |
|----------|---------|----------|---------|
| 1. -24 | 2. -16 | 3. -1300 | 4. 35 |
| 5. -5 | 6. 6 | 7. -7 | 8. -11 |
| 9. -70 | 10. -72 | 11. 374 | 12. -8 |
| 13. -231 | 14. 3 | 15. 6 | 16. 720 |

Page 4

- | | | | |
|-----------|-----------|------------|-----------|
| 1. 15.33 | 2. 13.081 | 3. 2.713 | 4. 19.833 |
| 5. 7.7129 | 6. 24.143 | 7. 14.39 | 8. 11.62 |
| 9. 8.68 | 10. 20.5 | 11. 11.977 | 12. 8.3 |

Page 5

- | | | | |
|----------|-----------|-----------|----------|
| 1. 2.7 | 2. 0.413 | 3. 0.0952 | 4. 1.716 |
| 5. 48.51 | 6. 1.3515 | 7. 118.8 | 8. 20.24 |
| 9. 0.3 | 10. 96 | 11. 4.402 | 12. 870 |
| 13. 262 | 14. 300 | 15. 1.41 | 16. 1800 |

Page 6

- | | | | |
|---------------------|--------------------|----------------------|----------------------|
| 1. $8\frac{7}{12}$ | 2. $4\frac{3}{5}$ | 3. $10\frac{14}{15}$ | 4. $5\frac{5}{18}$ |
| 5. $10\frac{1}{7}$ | 6. $9\frac{1}{6}$ | 7. $7\frac{1}{10}$ | 8. $1\frac{1}{4}$ |
| 9. $1\frac{19}{20}$ | 10. $\frac{2}{15}$ | 11. $2\frac{18}{35}$ | 12. $1\frac{11}{24}$ |

Page 7

- | | | | |
|-------------------|--------------------|-------------------|--------------------|
| 1. 4 | 2. 42 | 3. $5\frac{5}{9}$ | 4. $2\frac{2}{3}$ |
| 5. 12 | 6. $13\frac{1}{2}$ | 7. $3\frac{1}{7}$ | 8. $3\frac{1}{2}$ |
| 9. $\frac{4}{35}$ | 10. $1\frac{1}{5}$ | 11. $\frac{1}{4}$ | 12. $1\frac{1}{2}$ |

Page 8

- | | | | |
|-------------------------------------|--------------------|---------------------------------------|----------------------------------------|
| 1. -2.02 | 2. 3.3 | 3. 5.5 | 4. 4.2 |
| 5. -13.4 | 6. 6.513 | 7. $\frac{1}{10}$ | 8. $-\frac{5}{4} = -1\frac{1}{4}$ |
| 9. $\frac{31}{20} = 1\frac{11}{20}$ | 10. $-\frac{2}{5}$ | 11. $-\frac{38}{35} = -1\frac{3}{35}$ | 12. $-\frac{91}{24} = -3\frac{19}{24}$ |

Page 9

1. 26.785

2. -10.65

3. -5.27

4. 39.78

5. -2

6. 4

7. -160

8. -6

9. $-\frac{7}{20}$

10. $\frac{1}{2}$

11. $-\frac{9}{7} = -1\frac{2}{7}$

12. $\frac{26}{5} = 5\frac{1}{5}$

13. $\frac{21}{20} = 1\frac{1}{20}$

14. $\frac{10}{19}$

15. $-\frac{1}{12}$

16. $-\frac{74}{45} = -1\frac{29}{45}$

Page 10

1. 16

2. 17

3. 8

4. 11

5. 42

6. 4

7. 27

8. 10

9. 27

10. 4

11. 0.125

12. 0

13. $\frac{3}{2}$

14. 3

15. $\frac{250}{29}$

16. $\frac{1}{2}$