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Summer Packet - Students Entering Algebra 1

When you go into Algebra 1, we assume you have certain mathematical skills that were taught to you in previous years. If you do not have these skills, you will find that you will consistently get problems incorrect in your upcoming year. These problems are meant to address these skills in a review fashion. **Answer all questions without a calculator!!**

The whole packet will take you about *two weeks to complete*. We expect you to try hard at reviewing this material, to look things up using Google or YouTube, to watch video lessons on the Math Department Web Site and then complete this practice.

Answers will be shared on the first and second day of school. On those days you will have a chance to ask questions, readdress some of the problems, and then hand it in. It will be subject to being counted as part of your grade at the discretion of the teacher.

Directions: Each of the following problems comes from Pre-Algebra and should help prepare you for Algebra 1. Please show ALL work for each problem (no calculator).

Order of Operations – Evaluate each expression.

1. $4 \times 16 + 8 - 0 \div 5$	2. $8(3 + 4) - 2 \times 8 \div (5 - 3)$	3. $(8^2 + (13 - 4)^2 \div 5)$
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4. Insert parentheses to make the following equation true:

$$8 + 12 \div 4 \times 5 = 1$$

Integer Operations – Simplify each expression:

5. $94 - 87$	6. $- 51 - 98$	7. $29 - 100$	8. $- 777 - (- 801)$
9. $- 10 \times (- 2 \times 18)$	10. $- 844 \div 4$	11. $\frac{- 183}{- 61}$	12. $891 \div - 91$

Fraction Operations: write in simplest form:

13. $5\frac{2}{5} + 4\frac{1}{5}$	14. $2\frac{5}{386} + 5$	15. $\frac{2}{3}(3x + 9)$	16. $9 - 2\frac{1}{3}$
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17. $10\frac{1}{4} - 3\frac{2}{3}$	18. $1\frac{5}{285} - 4$	19. $-\frac{16}{9} + 8$	20. $-\frac{3}{84} + 3$
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One-Step Equations – Solve each equation and check your answers:

21. $x + 22 = 104.8$	22. $184 - x = 51$	23. $x - 6 = 30 + 12$
24. $30x = 480$	25. $4y - 8 = 20$	26. $17 = \frac{x}{3}$
27. $\frac{x}{8} = -4$	28. $\frac{x}{24} = \frac{5}{12}$	29. $\frac{7}{x} = \frac{3}{9}$

Please perform the following divisions. Show your work. Do not use a calculator. Express any remainders as a fraction.

30. $3 \overline{)489}$	31. $13 \overline{)417}$	32. $3.2 \overline{)118.4}$
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Please perform the following divisions. Show your work. Do not use a calculator.

33. $\begin{array}{r} 48 \\ \times 4 \\ \hline \end{array}$	34. $\begin{array}{r} 83 \\ \times 27 \\ \hline \end{array}$	35. $\begin{array}{r} 621 \\ \times 74 \\ \hline \end{array}$
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Please list the factor pairs of the following numbers.

36. 72	37. 48	38. 37
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Please write a prime factorization for the following numbers using factor trees.

39. 210	40. 185	41. 204
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Please complete the following table as needed. Express your fraction answers in simplified form.

	Decimal	Fraction	Percent
42.			100%
43.	.6		
44.		$\frac{1}{3}$	
45.	4.23		
46.			64%
47.			34.2%
48.		$\frac{5}{2}$	
49.			.08%
50.		$\frac{6}{7}$	

Please convert the following to improper fractions. Do not use a calculator.

51. $\frac{12}{7} =$	52. $\frac{38}{3} =$	53. $-\frac{17}{12} =$
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Please convert the following to mixed fractions. Do not use a calculator.

54. $5\frac{1}{7} =$	55. $9\frac{2}{3} =$	56. $-3\frac{5}{12} =$
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Please solve for the variable in the following proportions using cross-multiplication. Show your work. Do not use a calculator. Express your answers as fraction when necessary.

57. $\frac{x}{4} = \frac{70}{40}$	58. $\frac{5}{23} = \frac{3}{b}$	59. $\frac{5}{g} = \frac{25}{15}$
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60. Please round the following number to the indicated place.

Round to	Tenth	Hundredth	Thousandth	Thousand	Whole Number
1458.35892					