

Pre-Algebra Summer Packet

Word List 2010-2011

TERMS SHOULD BE IN THE FIRST SECTION OF YOUR PRE-ALGEBRA BINDER.

Chapter One Terms

(Due On The first Day Of Class)

Variable	x- coordinate
Integers	y-coordinate
Origin	y- axis
Ordered pair	x- axis
Evaluate	Inductive reasoning
Quadrants	Coordinate Plane
Variable expression	Opposites
Conjecture	

Pre-Algebra Binder

Your binder should be at least a two inches with five divider tabs

1. Sections one – math prayer and mission
2. Section two- vocabulary words
3. Sections three- work from the summer math packet
4. Section four – Do Now/ Daily notetaking guide
5. Section five- notes

Prayer Before Mathematic Class

Heavenly father, fill us with the wonder and knowledge of the universe as we study mathematics- a reflection of your mind. Grant us the strength to be consistently positive thinkers, the courage to persist in changing all negative thought into positive actions , and the faith to center our lives on Jesus, Your Son, the root of our salvation. Amen

Consistency + Persistency = Success

St. Joseph

St. Augustine

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(Answer ID # 0452951)

Algebra

Simplify.

1. $7 \times 32 \div 2$	2. $90 + 41 + 3 - 5$	3. $60 \div 3 \times 17$
4. $77 + 24 \div 3$	5. $28 \div 7 + 3$	6. $9 \times 2 + 28$
7. $5 - 30 + 24 \times 3$	8. $66 \times 5 + 45$	9. $93 \times 15 - 20 + 41$
10. $81 \div 3 \times 41 - 5$	11. $72 \div 9 + 13 \times 2$	12. $80 - 10 + 1$
13. $45 \div 5 - 3$	14. $99 \times 38 \div 2$	15. $71 + 48 \div 8$

Simplify.

16. $9 + 31 - 11 - 12$	17. $72 \times 4 + 17$	18. $56 \div 7 - 2 + 4$
19. $56 \div 8 + 1$	20. $58 \times 48 \div 8$	21. $30 \div 6 \times 41$
22. $45 \div 9 \times 41$	23. $7 + 2 + 42 - 5$	24. $8 \times 81 \div 9$
25. $59 - 5 \times 3$	26. $9 + 1 \times 28$	27. $78 - 40 \div 8$
28. $55 + 35 \times 5 - 5$	29. $7 + 49 \times 24$	30. $96 \div 8 + 5$

Simplify.

31. $(94 + 29) \times (64 \div 2 - 2)$	32. $57 \div 3 \times (4 + 2)$
33. $81 - 1 + 3$	34. $(60 \times 99 \div 9)$
35. $91 \times 2 - 1 + 5 - 26$	36. $(28 \div 7) + 43$
37. $(8 + 43 \times 1 \times 52) - 3$	38. $63 \div 7 + 3$
39. $69 \times 24 \times 2$	40. $62 - 2 + 12 \div 2$

Fill in the missing operations.

41. $65 \square 5 \square 50 = 275$ Use the operations: \times and $-$
42. $6 \square 54 \square 3 = 321$ Use the operations: \times and $-$
43. $(58 \square 1) \square 26 \square 2 = 110$ Use the operations: $+$, \times , and \times

Complete by evaluating each expression

44. $n - 1 \times 5$ for $n=6$	45. $56 - (n \div 2)$ for $n=76$	46. $8 + n + 37$ for $n=42$
47. $20 \div n + 3$ for $n=4$	48. $n - 41 + 1$ for $n=86$	49. $n \times 23 - 49$ for $n=68$
50. $74 + n + 23$ for $n=2$	51. $77 \div 7 + n$ for $n=2$	52. $n \times 54 - 43$ for $n=5$

Express each phrase as an algebraic expression.

53. 48 more than a number b	54. sum of a number s and 25
55. difference of a number x and 42	56. a number f multiplied by 18
57. product of 43 and a number v	58. 4 divided by a number w

Solve each equation.

59. $35 + r = 102$	60. $115 = a + 61$	61. $150 = n + 77$
62. $68 + u = 85$	63. $69 + p = 120$	64. $37 + g = 41$
65. $91 = c + 19$	66. $118 = j + 99$	67. $112 = 79 + q$

Solve each equation.

68. $74 - t = 45$	69. $42 = d - 8$	70. $42 - h = 38$
71. $18 = y - 43$	72. $k - 33 = 21$	73. $26 = 63 - z$
74. $e - 39 = 44$	75. $58 = 74 - y$	76. $31 = 55 - k$

Solve each equation.

77. $12 = 4q$	78. $w \div 9 = 4$	79. $12 = 2s$
80. $z \div 7 = 8$	81. $45 = 5a$	82. $42 \div t = 7$
83. $6 = 3r$	84. $40 \div n = 5$	85. $9v = 63$

Solve each equation.

86. $d - 22 = 12$	87. $121 = p + 30$	88. $46 = 42 + g$
89. $b - 20 = 19$	90. $24 = 3e$	91. $9x = 81$
92. $90 = u + 27$	93. $j \div 7 = 7$	94. $4 \div f = 2$

Complete the function table.

95. Rule: $n = 7u$							
Input	u	4	5	6	7	8	
Output	n	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
96. Rule: $q = c + 4$							
Input	c	7	14	21	28	35	42
Output	q	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Complete the function table.

97. Rule: $m = f \div 4$

Input	f	12	16	20	24	28	32
Output	m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

98. Rule: $a = 6z$

Input	z	9	10	11	12	13	14	15
Output	a	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Write the rule for each function. Write the rule as an equation.

99. Rule: _____

Input	x	2	8	14	20	26
Output	k	4	16	28	40	52

Complete the function table and write the rule for each function.

100. Rule: _____

Input	p	<input type="text"/>	14	19	34	44	51
Output	g	49	42	37	22	<input type="text"/>	5

Write an equation for each problem. Then solve the equation.

101. 11 plus a number is 99.

102. A number divided by 9 is 5.

103. Nine times a number is 99.

104. The difference between 36 and a number is 29.

105. A number plus 76 is 89.

106. A number multiplied by 3 is 24.

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Number Theory

Classify each number as prime or composite.

1. 53 <input type="checkbox"/> Prime <input type="checkbox"/> Composite	2. 21 <input type="checkbox"/> Prime <input type="checkbox"/> Composite	3. 47 <input type="checkbox"/> Prime <input type="checkbox"/> Composite	4. 65 <input type="checkbox"/> Prime <input type="checkbox"/> Composite
5. 88 <input type="checkbox"/> Prime <input type="checkbox"/> Composite	6. 26 <input type="checkbox"/> Prime <input type="checkbox"/> Composite	7. 14 <input type="checkbox"/> Prime <input type="checkbox"/> Composite	8. 60 <input type="checkbox"/> Prime <input type="checkbox"/> Composite

Complete each divisibility table. Write **yes** if the number is divisible by the given number. Write **no** if it is not divisible by the given number.

9. 22,954 by 3 _____ by 4 _____ by 5 _____ by 7 _____ by 10 _____	10. 1,296 by 2 _____ by 3 _____ by 7 _____ by 8 _____ by 9 _____	11. 61 by 2 _____ by 3 _____ by 7 _____ by 9 _____ by 13 _____	12. 1,217 by 2 _____ by 6 _____ by 7 _____ by 12 _____ by 13 _____
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Use the clue to fill in the missing digit.

13. The number <input type="text"/> 691 is divisible by 19.	14. The number 5 <input type="text"/> is divisible by 14.
15. The number 66 <input type="text"/> is divisible by 18.	16. The number 7 <input type="text"/> 6 is divisible by 6.
17. The number 369 <input type="text"/> is divisible by 12.	18. The number 42 <input type="text"/> 4 is divisible by 16.
19. The number 264 <input type="text"/> is divisible by 7.	20. The number <input type="text"/> 855 is divisible by 5.

List all of the factors of each number.

21. 41	22. 49	23. 14	24. 86
25. 45	26. 76	27. 51	28. 90
29. 69	30. 20	31. 38	32. 13

Find the prime factorization of each number.

33. 48	34. 72	35. 80	36. 32
37. 31	38. 22	39. 15	40. 30
41. 39	42. 71	43. 28	44. 17

Find the greatest common factor of each set of numbers.

45. 84 and 88	46. 84 and 49	47. 60 and 18
48. 23 and 29	49. 54, 63, and 27	50. 88, 32, and 96
51. 58 and 59	52. 25 and 30	53. 63 and 75

Find the least common multiple.

54. 4 and 15	55. 6 and 9	56. 7 and 11
57. 2, 4, and 7	58. 4, 20, and 28	59. 6 and 15
60. 6 and 18	61. 8 and 12	62. 6, 12, and 42

Complete.

63. Identify two numbers whose GCF is 12 and whose LCM is 252. Describe how you found the number.	64. The divisibility rules are helpful in math because they allow us to analyze division problems to arrive at a quick solution. The number 6 is divisible by both 2 and 3. How can you tell if a number is divisible by 6? Show by example a number that is divisible by 2, 3, and 6.
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Fractions

Fill in the missing number.

1. $\frac{7}{10} = \frac{126}{\square}$	2. $\frac{\square}{44} = \frac{6}{11}$	3. $\frac{108}{\square} = \frac{9}{4}$
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Write each fraction in simplest form.

4. $\frac{5}{25}$	5. $\frac{6}{8}$	6. $\frac{4}{8}$	7. $\frac{36}{72}$
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Compare. Write $<$, $>$, or $=$.

8. $\frac{6}{9}$ $\frac{2}{3}$	9. $\frac{1}{9}$ $\frac{11}{14}$	10. $\frac{1}{22}$ $\frac{11}{18}$
11. $\frac{8}{12}$ $\frac{6}{13}$	12. $\frac{7}{9}$ $\frac{6}{10}$	13. $\frac{3}{26}$ $\frac{12}{28}$

Complete.

14. Is $\frac{5}{2}$ greater than $2\frac{1}{2}$? Explain.	15. Is it possible to find a fraction that is smaller than any other fraction? Explain.
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Order the fractions from least to greatest.

16. $\frac{1}{9}, \frac{5}{11}, \frac{6}{10}$	17. $\frac{4}{7}, \frac{2}{5}, \frac{8}{15}$	18. $\frac{14}{17}, \frac{4}{8}, \frac{1}{4}$
19. $\frac{10}{13}, \frac{8}{18}, \frac{2}{6}$	20. $\frac{1}{3}, \frac{5}{16}, \frac{1}{2}$	21. $\frac{8}{12}, \frac{3}{19}, \frac{9}{14}$

Write each improper fraction as a mixed number in simplest form.

22. $\frac{50}{11}$	23. $\frac{92}{16}$	24. $\frac{38}{12}$	25. $\frac{15}{8}$
26. $\frac{11}{5}$	27. $\frac{64}{10}$	28. $\frac{39}{9}$	29. $\frac{85}{13}$

Write each mixed number as an improper fraction in simplest form.

30. $4\frac{10}{15}$	31. $6\frac{4}{7}$	32. $3\frac{1}{2}$	33. $1\frac{5}{12}$
34. $5\frac{1}{3}$	35. $2\frac{10}{16}$	36. $1\frac{8}{9}$	37. $2\frac{14}{17}$

Fill in the missing number.

38. $\frac{59}{\square} = 6\frac{5}{9}$	39. $\frac{9}{2} = 4\frac{\square}{2}$
40. $\frac{42}{13} = 3\frac{3}{\square}$	41. $\frac{8}{3} = \square\frac{2}{3}$

Add or subtract. Write the answer in simplest form.

42. $13\frac{5}{19} - 6\frac{3}{19}$	43. $\frac{10}{21} + \frac{17}{21}$	44. $\frac{5}{13} + \frac{12}{13} + \frac{6}{13}$

Multiply. Write the answer in simplest form.

45. $13 \cdot \frac{15}{16}$	46. $8 \cdot \frac{1}{2}$	47. $6 \cdot \frac{6}{17}$

Multiply. Write the answer in simplest form.

48. $\frac{1}{8} \cdot \frac{2}{3}$	49. $\frac{3}{14} \cdot \frac{7}{12}$	50. $\frac{14}{15} \cdot \frac{4}{13}$

Divide. Write the answer in simplest form.

51. $\frac{5}{10} \div \frac{13}{14}$	52. $\frac{2}{6} \div \frac{2}{3}$	53. $\frac{5}{8} \div \frac{3}{4}$

Divide. Write the answer in simplest form.

54. $5 \div \frac{4}{5}$	55. $3\frac{5}{12} \div 1\frac{1}{3}$	56. $11\frac{8}{16} \div 7$

Add or subtract. Write the answer in simplest form.

57. $10 - \frac{8}{17}$	58. $\frac{5}{9} + 18$	59. $6 - \frac{2}{7}$

Add or subtract. Write the answer in simplest form.

60. $\frac{10}{12} - \frac{6}{10}$	61. $\frac{1}{6} + \frac{2}{4}$	62. $\frac{5}{8} + \frac{15}{18}$

Add or subtract. Write the answer in simplest form.

63. $8\frac{8}{11} - \frac{1}{2}$	64. $1\frac{2}{6} + 6\frac{11}{14}$	65. $3\frac{1}{3} + \frac{2}{5}$

Solve. Write the answer in simplest form.

66. $g - \frac{2}{12} = 4\frac{5}{6}$

67. $z + \frac{4}{5} = \frac{13}{10}$

Solve. Write the answer in simplest form.

68. $\frac{11t}{12} = \frac{11}{36}$

69. $8 \div v = 1\frac{7}{17}$

Complete.

70. There are 50226 colored marbles in a large plastic jar (yes it is a pretty large jar). If a third of them are blue, one-sixth are red, and one-twelfth are green, how many are some other color?

71. Alyssa is doing research on lemurs. On Monday, she spent two and three-fourths hours on the Internet looking for materials. On Tuesday, she browsed encyclopedias online for one and a half hours. On Wednesday, she made note cards and read a book about lemurs. She worked on the report for three and a half hours. Thursday she didn't feel well, but she still looked through some online journals for 35 minutes. Friday she didn't work at all. How many minutes of time did she spend on the Internet during the week?

Complete.

72. Identify two fractions whose sum is $\frac{103}{66}$ and whose difference is $\frac{7}{66}$.

73. You should know that to convert any fraction into a decimal number you can divide the numerator by the denominator. Are there any fractions where this is not strictly necessary, because you can do the conversion easily in your mind rather than perform the division?

Name _____

Date _____
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Inequalities

State whether the value for the unknown makes the inequality true or false.

1. $126 < 20j$ $j = 6$	2. $12v > 132$ $v = 9$	3. $\frac{65}{k} \leq 5$ $k = 13$
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Solve each inequality.

4. $-10 - g \geq 20$	5. $-15 > w + 16$	6. $x + 19 \geq -14$
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Solve each inequality.

7. $-13 \leq \frac{1}{2} + h$	8. $q - \frac{1}{3} \leq -12$	9. $t - \frac{5}{12} \geq -8$
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Solve each inequality.

10. $3 \geq \frac{m}{-13}$	11. $5z \geq 50$	12. $-12a \geq 550$
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Solve each inequality.

13. $-5(f + 9) \leq -6 - 3f$

14. $-113 \leq 12k + 11$

State whether the value for the unknown makes the inequality true or false.

15. $9 < \frac{72}{z}$

$z = 12$

16. $26 - m \geq 6$

$m = 20$

17. $32 \leq 30 + c$

$c = 12$

Solve each inequality.

18. $245 < -17r$

19. $\frac{w}{10} \geq -19$

20. $21g > 162$

Complete.

<p>21. The pressure in a water cooling line at a power plant must remain less than a certain value before an emergency situation occurs. The pressure is at 86% of the emergency limit and the limit is ninety-three pounds per square inch (PSI). The pressure is measured in increments of 0.1 PSI. How many PSI can the pressure rise without reaching the emergency pressure limit?</p>	<p>22. Ashley is testing the way the shapes of clay objects change as they are exposed to temperature changes. She has two identical clay spheres. She puts sphere A in oven A at a temperature of 26°C and sphere B in oven B at 25°C. She increases the temperature on oven A at a rate of 3.1°C per minute for twelve minutes. She increases the temperature in oven B at a rate of 2.7°C for fifteen minutes. Which clay sphere (A or B) was exposed to the highest temperature at the end of the experiment?</p>
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Name _____



Date _____

Algebra

(Answer ID # 0652694)

Graph.

1. A line that passes through the point (0, -5). The line is perpendicular to another line whose slope=1	2. A line that passes through the point (2, 1). The line is parallel to another line whose slope= $\frac{3}{5}$
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Find the intercepts of the line.

3. $5x + y = 36$	4. $4x + y = -12$	5. $y = x + 2$
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Write each equation in standard form.

6. $\frac{4}{3} - \frac{2}{3}y = x$	7. $-2 = 5y + 4x$
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Complete.

8. $f(x) = -10x + 11$ $g(x) = -10x^3 + 10x^2 - 15x + 13$ find $f(f(8))$	9. $f(x) = -11x^2 - 12x + 13$ $g(x) = 11x - 14$ find $f(9) \times f(-4) + g(-8) \times f(-10)$	10. $f(x) = 11x^3 + 12x^2 - 10x - 12$ $g(x) = -14x - 12$ find $f(11) - g(11)$
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Write an equation of the line.

11. y-intercept= $\frac{7}{2}$ x-intercept= 7	12. y-intercept= -17 x-intercept= $\frac{17}{3}$
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Sketch the graph of the equation.

13. $y = -3 + x - 2$ <i>omit</i>	14. $y = 2x - 3 + 1$ <i>omit</i>
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Write an equation of the line that passes through the given two points.

15. (-7,4), (5,-44)	16. (-2,4), (2,-8)	17. (-6,8), (-1,-17)
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Find the slope and the y-intercept of the line.

18. $6x + 5y = 6$	19. $-20x = 72 - 2y$	20. $\frac{42}{5} = \frac{12}{5}y + \frac{6}{5}x$
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