

Name _____
Summer Packet for Algebra 1 Due: Monday August 28, 2017

Complete this packet neatly in pencil. Show all work!!!

Use calculators only to check your answer. Record your final answer on the recording sheet.

Integers

List the integer(s) that make the statement true. (Hint – absolute value is the number of spaces you move on the number line)

1. $|3| =$

2. $|-12| =$

3. $|0| =$

4. $|n| = 6$

5. $|n| \leq 1$

6. $|n| < 2$

Find the sum.

7. $-2 + (-17) =$

8. $-26 + 26 =$

9. $-51 + 48 =$

10. $-8 + 9 =$

Find the difference as a sum. (Hint – Keep, Change, Change)

11. $4 - 10 =$

12. $14 - (-46) =$

13. $0 - 20 =$

14. $-48 - (-48) =$

Find the sum or difference

15. $6 + -7 + -3 =$

16. $-8 + 1 + -1 =$

17. $(-3 - 1) - 5 =$

18. $9 + (-5 - 6) =$

Find the product. (Hint – Multiply. Count your negatives – even amount is positive, odd amount is negative)

19. $(2)(-8)(-6)=$

20. $(-2)(0)(-12)=$

21. $(-7)(-11)=$

22. $(3)(-5)(6)=$

Find the quotient. (Hint – Same rules as multiplication)

23. $144 \div (-12)=$

24. $-54 \div (-18)=$

25. $0 \div (-7)=$

26. $100 \div 25=$

Find the quotient. If there is no answer, EXPLAIN WHY! (Hint – it has something to do with a zero)

27. $(-3 + 3) \div (-8 + 2) =$

28. $(12 - 4) \div (4 - 12) =$

29. $(-8 + 2) \div (-3 + 3) =$

30. $(6 + 4) \div (4 - 6) =$

Add or Subtract. Write the answer as a proper fraction in lowest terms or as a mixed number in simple form. (Hint – You need a common denominator to add/subtract.)

31. $\frac{3}{4} + \frac{3}{4} =$

32. $-3\frac{1}{4} - (-1\frac{1}{6}) =$

33. $-1\frac{5}{6} + 2\frac{3}{8} =$

34. $\frac{-11}{12} + \frac{13}{13} =$

35. $8\frac{1}{8} - (-2\frac{1}{2}) =$

36. $5 - \frac{3}{4} =$

Multiply or Divide. Write the answer as a proper fraction in lowest terms or as a mixed number in simple form. (Hint – You can cross cancel/cross reduce when you multiply/divide. Dividing is the same as multiplying by the reciprocal.)

37. $\frac{-2}{5} \times \frac{-15}{16} =$

38. $\frac{5}{8} \div 1\frac{4}{5} =$

39. $5\frac{2}{5} \times \frac{5}{9} =$

40. $-5\frac{5}{8} \div 10 =$

41. $(-4\frac{1}{6} \div 5) \times \frac{-2}{5} =$

42. $-3\frac{1}{8} \div 4 \div \frac{-5}{4} =$

Order of Operations**(Hint – PEMDAS)****Simplify the expression using order of operation.**

43. $35 - 14 \div 2 + 64 =$

44. $54 \div 6 + 18 \times 2 =$

45. $9 \times 2^3 + 7 \times 5^2 =$

46. $(45 - 19)(8 + 7) =$

47. $(12 + 18) \div (19 - 4) =$

48. $\frac{9+4 \times 3}{7} =$

Simplify the following expression using order of operations. Show work!

49. $5(18 + 12)$

50. $21(10 - 7)$

51. $3(8 + 2)$

52. $10(3 - 8)$

53. $-4(9 + -3)$

54. $-2(-4 - 7)$

Simplify the following expression using distributive property. Show work!
(Hint – you should get the same answers as above by showing different steps)

55. $5(18 + 12)$

56. $21(10 - 7)$

57. $3(8 + 2)$

58. $10(3 - 8)$

59. $-4(9 + -3)$

60. $-2(-4 - 7)$

Write a variable expression for a word phrase. Do not solve.
(Hint – Remember that you cannot use a times sign and watch the order with terms like “less than” and “subtracted from”)

61. fifteen more than the product of a number and eleven

62. a number divided by the remainder of eighty-three minus ten

63. the sum of a number and ten, divided by the difference when a number is decreased by five

Write an equation or inequality for the word sentence. Do not solve.

65. The sum of a number and three is greater than five.

66. The product of a number and seven is less than or equal to fourteen.

67. Four divided by the product of nine and a number is equal to eight subtracted from ten.

68. Three more than the product of six and a number is equal to the sum of the number and twenty-eight.

Exponents

Simplify the expression. (Hint – any non-zero number to the zero power equals one)

69. 2^6

70. 10^3

71. $3^3 + 5^2$

72. $(15 + 12)^0$

Evaluate the expression when $a = 1$, $b = 2$, and $c = 3$.

(Hint - Substitute the values for the variable and follow order of operation rules)

73. $6a + b^3$

74. $3b^2c^3$

75. $(abc)^0$

76. $8c + (10b + c^2)4$

Evaluate the expression if $m = 5$, $n = 3$, $p = 2$.

77. $4m^2$

78. $(9n)^2$

79. np^0

80. $m^3 - n^3$

81. $p^n m^n$

82. $(7 + n^m)^n$

Like Terms

Add or subtract. (Hint – Only like terms can be combined. A like term must have the same variable(s) and the same exponent)

83. $-5x + x$

84. $9y - 13y$

85. $10ab + -5ab + -3ab$

86. $7ab - 7ab$

87. $x - 8x$

88. $4m + m - 2m$

89. $5x + -8x + -7x + 8x + 2x + 7x + -5x$

90. $y^2 + y^2 + y^2$

91. $xy + x + xy$

92. $a + a + 5a$

93. $4x + x + 3x + 8y$

94. $6x^3 + 9x + 10x^3 + 4x^2$

Simplify using distributive property.

95. $8(b - 5)$

96. $6(3n + 2)$

97. $7(5n + 3)$

98. $(4x + 3)3$

Multiply. (Hint – Everything can multiply together. Multiply the coefficients aka front numbers and add the exponents of the same variable.)

99. $(4y)(-3y)$

100. $(-6a)(b)(7c)$

101. $(5a^2)(-5a^4)$

102. $(-2a^2)(-2a^2)(-2a^2)$

103. $(-5xy)(-9xy)(-2xy)$

104. $(x^2y)(x^2y)(x^2y)(x^2y)$

105. $(7a)^2$

106. $(10ab^4)^2$

107. $(-9y^3)^2$

108. $(5a^3)^3$

Simplify the expression.

109. $6m - 11 + 3m$

110. $-19 + 5r - 12$

111. $2q - 9 - 2q + 11$

112. $-3n + 7 + 2n - 8$

Simplify the expression.

113. $5(y + 3) + 7y$

114. $6(r + 5) + 9(r - 2) - 4r$

115. $[4 + (-3)]b - b(-6 + 2)$

116. $3x + 12 - x(2 + 5)$

117. $5xy - (4xy - xy)$

118. $(3x^2)(4x) - (5x)(2x^2)$

Equations

Solve the following equations. Show your steps! (Hint – only use the inverse operation to move terms across the equal sign)

119. $15 = 3m - 8m$

120. $9 = 10r - 16r + 5r$

121. $32 - 4w = 0$

122. $15 - c = 20$

123. $55 - 3q - 2q = 10$

124. $7f = 27 - 2f$

125. $7p = 3p + 20$

126. $2b + 12b = 3b - 5b$

127. $8z - z - 40 = 10z + z$

128. $4a - 7 = 18 - a$

129. $5h - 3h + 8 = 4 + 4h - 6$

130. $6n + 2(n + 7) = 46$

$$131. \quad 34 = 3(t + 6) - 8$$

$$132. \quad 9 - 4(x - 3) = 17$$

$$133. \quad 15 - 6(x + 2) = 15$$

$$134. \quad \frac{3}{8} m + 9 = 18$$

$$135. \quad 14 + \frac{v}{11} = 17$$

$$136. \quad -14 + 5 = 7x - 30$$

$$137. \quad \frac{3}{5} c = 2c - 7$$

$$138. \quad 5b - 2 = b + 10$$

Don't forget to record your final answers on final answer recording sheet! :)

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Final Answer Sheet

Please show your work on the other pages, then put your final answers here in the answer blanks.

- | | | |
|-----------|-----------|-----------|
| 1. _____ | 24. _____ | 47. _____ |
| 2. _____ | 25. _____ | 48. _____ |
| 3. _____ | 26. _____ | 49. _____ |
| 4. _____ | 27. _____ | 50. _____ |
| 5. _____ | 28. _____ | 51. _____ |
| 6. _____ | 29. _____ | 52. _____ |
| 7. _____ | 30. _____ | 53. _____ |
| 8. _____ | 31. _____ | 54. _____ |
| 9. _____ | 32. _____ | 55. _____ |
| 10. _____ | 33. _____ | 56. _____ |
| 11. _____ | 34. _____ | 57. _____ |
| 12. _____ | 35. _____ | 58. _____ |
| 13. _____ | 36. _____ | 59. _____ |
| 14. _____ | 37. _____ | 60. _____ |
| 15. _____ | 38. _____ | 61. _____ |
| 16. _____ | 39. _____ | 62. _____ |
| 17. _____ | 40. _____ | 63. _____ |
| 18. _____ | 41. _____ | 64. _____ |
| 19. _____ | 42. _____ | 65. _____ |
| 20. _____ | 43. _____ | 66. _____ |
| 21. _____ | 44. _____ | 67. _____ |
| 22. _____ | 45. _____ | 68. _____ |
| 23. _____ | 46. _____ | 69. _____ |

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Please show your work on the other pages, then put your final answers here in the answer blanks.

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|-----------|------------|------------|
| 70. _____ | 93. _____ | 116. _____ |
| 71. _____ | 94. _____ | 117. _____ |
| 72. _____ | 95. _____ | 118. _____ |
| 73. _____ | 96. _____ | 119. _____ |
| 74. _____ | 97. _____ | 120. _____ |
| 75. _____ | 98. _____ | 121. _____ |
| 76. _____ | 99. _____ | 122. _____ |
| 77. _____ | 100. _____ | 123. _____ |
| 78. _____ | 101. _____ | 124. _____ |
| 79. _____ | 102. _____ | 125. _____ |
| 80. _____ | 103. _____ | 126. _____ |
| 81. _____ | 104. _____ | 127. _____ |
| 82. _____ | 105. _____ | 128. _____ |
| 83. _____ | 106. _____ | 129. _____ |
| 84. _____ | 107. _____ | 130. _____ |
| 85. _____ | 108. _____ | 131. _____ |
| 86. _____ | 109. _____ | 132. _____ |
| 87. _____ | 110. _____ | 133. _____ |
| 88. _____ | 111. _____ | 134. _____ |
| 89. _____ | 112. _____ | 135. _____ |
| 90. _____ | 113. _____ | 136. _____ |
| 91. _____ | 114. _____ | 137. _____ |
| 92. _____ | 115. _____ | 138. _____ |