

Course Name: **Algebra 1**

Summer Assignment:

This packet includes material your teacher expects you to know when you begin the course. It is designed to be done over the course of the summer to provide practice and highlight the concepts you learned in your previous math course.

Instructions:

- Complete the packet on loose leaf paper.
- Write your name and the course on the top of every sheet you use.
- Number your work, and do the problems in order.
- Copy each problem before showing your work.
- Check your answers as you go (answers are included at the end of the packet).

**The completed assignment is due on the first day of class and is worth 25 points for all math courses. College Prep courses will take a 50 point Quiz on the 3<sup>rd</sup> day of class.**



## Algebra 1 Summer Packet

All work should be done **WITHOUT** the use of a calculator. You will not be permitted to use a calculator on the test covering this material. Show all of your work and circle your final answer.

### I. Fractions and Decimals

1. Write the mixed number as an improper fraction:  $4\frac{2}{3}$
2. Write the improper fraction as a mixed number:  $\frac{27}{4}$

Write as a decimal:

3.  $\frac{1}{4}$

4.  $\frac{7}{10}$

5.  $\frac{3}{5}$

6.  $2\frac{1}{4}$

7. 36%

8. 281%

Write as a fraction in simplest form:

9. 0.3

10. 3.8

11. 1.6

12. 0.56

13. What is  $\frac{4}{5}$  of 25?

14. What is  $\frac{1}{4}$  of 24?

### II. Write each as an algebraic expression

15. the difference of m and 6

16. t increased by 8

17. the sum of t and 9

18. x decreased by 21

19. 2 cubed

20. the product of y and 8

21. the quotient of n and 5

22. twice z

23. 9 less than n

24. 5 squared

25. n less than 25

26. half of b

**III. Evaluate each expression using the Order of Operations**

27.  $2^2 - 2$

28.  $\left(\frac{18}{6}\right)^3$

29.  $(5)(2+2)$

30.  $\frac{12-6}{3}$

31.  $6+(4)(3)$

32.  $(5-3)^2$

33.  $(5-4)((2)(2))-1$

34.  $(6+6)(5)-(2)(4)$

35.  $\frac{15-(7-2)}{4-2}$

36.  $\frac{(3)(2)+6}{(2)(3)}$

37.  $\frac{8}{2} - \frac{6-2}{2}$

38.  $\left(\frac{18}{6}\right)(6+4)-(5)(3)$

39.  $\frac{6}{3+1+4-4-2}$

40.  $7+3^2 \cdot 2$

41.  $(5+17)-4^2$

**IV. Find each sum or difference**

42.  $-7+(-8)$

43.  $-5-7$

44.  $-8+(-5)$

45.  $-17+14$

46.  $22+(-5)$

47.  $5-(-6)$

48.  $-8-1$

49.  $2\frac{5}{8}+4\frac{1}{8}$

50.  $\frac{3}{4}-\frac{5}{8}$

51.  $-\frac{1}{3}+\frac{1}{6}$

52.  $1+(-7)$

53.  $\frac{3}{4}-\frac{1}{5}$

54.  $17-(-29)$

55.  $1-\frac{1}{5}$

56.  $-21-47$

57.  $-9+32$

58.  $4-\frac{3}{16}$

59.  $-\frac{2}{7}-\frac{5}{14}$

60.  $15-(-32)$

61.  $2\frac{1}{2}+2\frac{3}{8}$

62.  $\frac{5}{12}+\frac{2}{3}$

**V. Find each product or quotient**

63.  $(4)(-9)$

64.  $\frac{-60}{6}$

65.  $(8)(-3)$

66.  $\frac{3}{4} \div \frac{12}{14}$

67.  $(-9)(-6)$

68.  $\frac{-99}{-11}$

69.  $\frac{3}{16} \square \frac{2}{5}$

70.  $18 \square \frac{1}{3}$

71.  $\frac{14}{-2}$

72.  $-\frac{1}{5}(-20)(-5)$

73.  $\frac{-24}{-12}$

74.  $(-4)(20)(2)$

75.  $\frac{-48}{3}$

76.  $\frac{2}{5} \div 20$

77.  $5\frac{1}{2} \square \frac{9}{16}$

78.  $8\frac{1}{4} \div \frac{3}{10}$

79.  $(-3)(-7)$

80.  $\frac{-64}{-16}$

81.  $(8)(-7)$

82.  $-\frac{3}{5} \div 12$

**VI. Evaluate each expression using the values given**

83.  $2(4n+5)$ ; use  $n = -3$

84.  $3z^2 - 7$ ; use  $z = 4$

85.  $(z-y)^2$ ; use  $y = 4$  and  $z = 3$

86.  $x^2 + z$ ; use  $x = 4$  and  $z = 3$

87.  $a(c-a)$ ; use  $a = 6$  and  $c = -2$

88.  $x + y^3$ ; use  $x = -6$  and  $y = -3$

89.  $r + p - q$ ; use  $p = 3, q = -4$ , and  $r = 5$

90.  $\frac{b}{3} + c$ ; use  $b = -3$  and  $c = 4$

**VII. Simplify each expression**

91.  $-8(-9x-6)$

92.  $-9(3+8n)$

93.  $4(b-10)$

94.  $-7(x+10)$

95.  $1-6b+b-6$

96.  $-10x-10x$

97.  $-7m-5m$

98.  $5x+x$

99.  $9+10v+2$

100.  $8n+2n$

101.  $10a+5(1+3a)$

102.  $-7+5(6+7x)$

103.  $8+4(-10r-8)$

104.  $3+5(10v-6)$

105.  $-7(8+6b)+3(9b+7)$

106.  $-(9-3k)-10(7k+8)$

107.  $10(n-6)+6(1+n)$

108.  $-8(7r+2)+5(-4r-1)$

**VIII. Solve each equation**

109.  $12r = -36$

110.  $\frac{p}{4} = 8$

111.  $n - 6 = -4$

112.  $a + 14 = 0$

113.  $\frac{v}{5} = 3$

114.  $x - 2 = -17$

115.  $133 = 19x$

116.  $\frac{m}{17} = 10$

117.  $p - 16 = -12$

118.  $-9 = \frac{x}{12}$

119.  $2 = n + 20$

120.  $\frac{k}{18} = 3$

121.  $-8x - 5 = 83$

122.  $-12 - 4x = 40$

123.  $27 = -3x - 18$

**IX. Solve each proportion**

124.  $\frac{10}{n} = \frac{2}{6}$

125.  $\frac{3}{2} = \frac{x}{6}$

126.  $\frac{9}{4} = \frac{k}{8}$

127.  $\frac{n}{9} = \frac{10}{2}$

128.  $\frac{y}{8} = \frac{4}{3}$

129.  $\frac{5}{3} = \frac{4}{b}$

130.  $\frac{n}{4} = \frac{3}{8}$

## Answers

1. $\frac{14}{3}$	2. $6\frac{3}{4}$	3. 0.25	4. 0.7	5. 0.6
6. 2.25	7. 0.36	8. 2.81	9. $\frac{3}{10}$	10. $\frac{19}{5}$
11. $\frac{8}{5}$	12. $\frac{14}{25}$	13. 20	14. 6	15. $m-6$
16. $t+8$	17. $t+9$	18. $x-21$	19. $2^3$	20. $8y$
21. $\frac{n}{5}$	22. $2z$	23. $n-9$	24. $5^2$	25. $25-n$
26. $\frac{1}{2}b$	27. 2	28. 27	29. 20	30. 2
31. 18	32. 4	33. 3	34. 52	35. 5
36. 2	37. 2	38. 15	39. 3	40. 25
41. 6	42. -15	43. -12	44. -13	45. -3
46. 17	47. 11	48. -9	49. $\frac{27}{4}$	50. $\frac{1}{8}$
51. $-\frac{1}{6}$	52. -6	53. $\frac{11}{20}$	54. 46	55. $\frac{4}{5}$
56. -68	57. 23	58. $\frac{61}{16}$	59. $-\frac{9}{14}$	60. 47
61. $\frac{39}{8}$	62. $\frac{13}{12}$	63. -36	64. -10	65. -24
66. $\frac{7}{8}$	67. 54	68. 9	69. $\frac{3}{40}$	70. 6
71. -7	72. -20	73. 2	74. -160	75. -16
76. $\frac{1}{50}$	77. $\frac{99}{32}$	78. $\frac{55}{2}$	79. 21	80. 4
81. -56	82. $-\frac{1}{20}$	83. -14	84. 41	85. 1
86. 19	87. -48	88. -33	89. 12	90. 3
91. $72x+48$	92. $-27-72n$	93. $4b-40$	94. $-7x-70$	95. $-5b-5$
96. $-20x$	97. $-12m$	98. $6x$	99. $10v+11$	100. $10n$
101. $25a+5$	102. $35x+23$	103. $-24-40r$	104. $50v-27$	105. $-15b-35$
106. $-67k-89$	107. $16n-54$	108. $-76r-21$	109. $r=-3$	110. $p=32$
111. $n=2$	112. $a=-14$	113. $v=15$	114. $x=-15$	115. $x=7$
116. $m=170$	117. $p=4$	118. $x=-108$	119. $n=-18$	120. $k=54$
121. $x=-11$	122. $x=-13$	123. $x=-15$	124. $n=30$	125. $x=9$
126. $k=18$	127. $n=45$	128. $y=\frac{32}{3}$	129. $b=\frac{12}{5}$	130. $n=\frac{3}{2}$