Algebra I Summer Packet

Welcome to Bishop Eustace!

Many of you have had a pre-algebra course in 8th grade. The purpose of this packet is to help you review and practice the topics that you had last year in order to minimize the review time in September. Give this packet your best effort and be prepared to ask any questions that you have. Complete all problems on loose-leaf paper (not on the packet itself) and make sure to SHOW ALL WORK done to arrive at your answer. Answers are provided for you to check your work. Bring the completed packet with you on the first day of class as your first homework assignment.

One of the many advantages of Bishop Eustace is the availability of extra help any period of the day. If you need additional assistance on any Algebra I topic, a mathematics teacher is in the math resource area of the library every period of the day to answer your questions. Please feel free to seek help from any math teacher.

Good luck and we look forward to seeing you in September!

Algebra 1 Summer Packet

<u>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.</u> 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. $\frac{3}{16}\bullet\frac{2}{5}$

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

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. $5\frac{1}{2}\bullet\frac{9}{16}$

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. $n=\frac{3}{2}$