

Algebra I
Summer Packet
Port Charlotte High School

Name _____
School _____
Math Teacher _____

Many topics that we will study next year in your Algebra I class build on topics that you have already learned in previous classes. Since many of you may have been away from these ideas for a period of time, you might need a refresher in order to be up to speed at the beginning of the course. We have chosen a selection of topics for you to cover during the summer. Please understand that they are not all the areas that we will expect you to know.

Do all work for these problems on a separate sheet of paper in PENCIL. Anything written on the packet will not be graded. Work for each problem must be in chronological order. Just an answer is not sufficient for most problems and will count as a wrong answer. If you are unfamiliar with a term or type of problem, refer back to your notes or go online to the various help sites for mathematics (see below). The skills covered are part of the foundation for your course. Mastery of these skills is assumed.

You are to work on these packets over the summer, getting online help, if needed to complete them. Math teachers will collect the packets the first day of class. You should be prepared to take a diagnostic test the first day to determine which areas of the summer packet the student needs to do additional work. During the week, you will be given the opportunity to ask questions on these areas during the last ten minutes of class each day. The teacher will supply resources for the student to use both in the classroom and online so that the student can review these topics. At the conclusion of the first week of school, you need to be prepared to take a test covering topics from the summer packet. This grade will be included as part of their first quarter grade.

NO CALCULATORS OF ANY KIND MAY BE USED FOR MOST OF THIS PACKET.
ONLY problems 180-192 may require a calculator.

We look forward to working with you next year!

Free Online math help sites:

www.math.com/homeworkhelp/Algebra.html

<http://www.algebra-help.info/>

<http://www.algebrahelp.com/>

Evaluate each expression. Problems with fractions must have answers with fractions (no decimal answers) where applicable.

1. $8 - (-2)$ 2. $(-3) - (-6)$ 3. $(-5) + (-3)$ 4. $2 - 7$ 5. $(-2) - 4$
6. $(-2) - (-4)$ 7. $1 + (-7)$ 8. $4 + (-4)$ 9. $5 - 7$ 10. $(-6) + 1$
11. $(-4)(-3)$ 12. $(7)(-1)$ 13. $(10)(-8)$ 14. $(-8)(-2)$ 15. $(-3)(-8)$
16. $10 \div -0.75$ 17. $-6.1 \div -6.393$ 18. $-5.5 \div 7.5$ 19. $0.7 \div 5.4$
20. $7.5 \div -1.9$ 21. $\frac{4}{3} + \left(-2\frac{2}{5}\right)$ 22. $2\frac{7}{8} - 3\frac{1}{2}$ 23. $3\frac{3}{7} + \left(-1\frac{1}{2}\right)$
24. $\left(-1\frac{6}{7}\right) + \left(-2\frac{1}{6}\right)$ 25. $\frac{9}{7} + \left(-\frac{3}{5}\right)$ 26. $\left(-\frac{4}{5}\right) - 2\frac{2}{3}$ 27. $8 + \left(-\frac{3}{2}\right)$
28. $\frac{1}{8} - \left(-\frac{8}{7}\right)$ 29. $\left(-\frac{7}{6}\right) + \left(-2\frac{3}{4}\right)$ 30. $(-1) - \left(-\frac{3}{2}\right)$ 31. $8 \times -\frac{3}{2}$
32. $-2 \times -\frac{4}{3}$ 33. $-3\frac{3}{8} \times \frac{1}{8}$ 34. $\frac{3}{2} \times -\frac{2}{3}$ 35. $-2 \times -\frac{11}{7}$
36. $-\frac{5}{9} \div 1\frac{2}{7}$ 37. $-\frac{7}{10} \div \frac{11}{10}$ 38. $\frac{6}{7} \div 3\frac{1}{8}$ 39. $-\frac{12}{7} \div 4\frac{3}{10}$
40. $\frac{4}{9} \div \frac{1}{2}$ 41. $\left(2\frac{1}{6} \times 1\frac{1}{3}\right) \div 2\frac{3}{5}$ 42. $\left(1\frac{1}{4} + 2\frac{1}{6}\right)^3$ 43. $1\frac{5}{6} + 1\frac{1}{4} \times 1\frac{1}{2}$
44. $2 + 2\frac{3}{5} \div \frac{5}{4}$ 45. $3\frac{1}{2} \left(3\frac{1}{2} - 2\frac{5}{6}\right)$

Evaluate each using the values given.

46. $x(x - z)$; use $x = 4$ and $z = 2$ 47. $j + h + h$; use $h = 4$ and $j = 5$
48. $m + 1 + n$; use $m = 5$ and $n = 1$ 49. $3zy$; use $y = 4$ and $z = 5$
50. $y + x \div 4$; use $x = 4$ and $y = 2$ 51. $3 - n(6 - m)$; use $m = 6$ and $n = 5$
52. $y + (4 - x) \div 6$; use $x = 4$ and $y = 5$ 53. $b^2 + 2a$; use $a = 4$ and $b = 2$
54. $ab + ab$; $a = 5$ and $b = 5$ 55. $5h - j^2$; use $h = 5$ and $j = 1$

56. $\frac{z(y+z)}{2}$; use $y = 7$ and $z = 10$

57. $\left(-\frac{5}{5}\right) + z + x$; use $x = 7$ and $z = 1$

58. $n(5-n) + m$; use $m = -5$ and $n = -3$

59. $p - \frac{m+n}{6}$; use $m = -4$, $n = -2$, and $p = -9$

60. $\frac{mn^3}{3}$; use $m = -3$, and $n = -1$

Write the name of each decimal place indicated.

61. 3.26347

62. 161,489,159

63. 9.68

64. 199.07

65. 750.321

66. 4.9903

67. 46.7516

68. 90

69. 7,814512,488

70. 8,408,432,788

Write each as a numeral.

71. five and eight hundredths

72. twenty-six and 16 hundredths

73. five thousandths

74. thirty-six and seven hundred thirty-seven thousandths

75. sixteen and five thousandths

76. five hundred ninety-nine ten thousandths

77. five hundred fifty-seven ten-thousandths

78. seven hundred eight hundred-thousandths

79. two thousand, eighty-two hundred-thousandths

80. three thousand, sixty-nine and one ten-thousandths

Write each numeral in words.

81. 60,610,010

82. 891,808,003

83. 72,247,121

84. 80,871,090

85. 200,370,049

86. 22.3647

87. 0.136

88. 1.23596

89. -3.7

90. 2.16

List all positive factors of each. Example: 24 1, 2, 3, 4, 6, 8, 12, 24

91. 27

92. 30

93. 21

94. 18

95. 28

96. 48

Write the prime factorization of each. Do not use exponents in your answer. Example: 24

24

2 · 12

2 · 2 · 6

2 · 2 · 2 · 3

97. 18

98. 15

99. 22

100. 25

101. 28

102. 30

103. 16

104. 144

Simplify each. Write your answer as a mixed number when possible.

105. $\frac{18}{12}$ 106. $\frac{40}{50}$ 107. $\frac{27}{45}$ 108. $\frac{30}{18}$ 109. $\frac{24}{36}$ 110. $\frac{144}{90}$ 111. $4\frac{36}{60}$

112. $5\frac{6}{42}$ 113. $9\frac{5}{30}$

Solve each equation.

114. $-5 = \frac{x}{5}$ 115. $-96 = -6x$ 116. $-14 = n + 4$ 117. $p - (-20) = 18$ 118. $\frac{k}{15} = 12$

119. $16 = \frac{b}{4}$ 120. $-7 - n = -13$ 121. $1 = x + (-12)$ 122. $-10x = -10$ 123. $-24 = v - 7$

124. $40 = 8(8 - x)$ 125. $\frac{-8}{10} = \frac{6}{v}$ 126. $\frac{x}{9} = -\frac{2}{8}$ 127. $\frac{6}{x} = \frac{8}{7}$ 128. $\frac{b}{-2} = \frac{-9}{7}$

129. $\frac{-a}{5} = \frac{6}{9}$ 130. $\frac{8}{x} = \frac{2}{3}$

Find each square root. You will be expected to know the perfect squares of 1 through 20.

131. $\sqrt{64}$ 132. $\sqrt{49}$ 133. $\sqrt{100}$ 134. $\sqrt{36}$ 135. $\sqrt{4}$

136. $\sqrt{256}$ 137. $\sqrt{169}$ 138. $\sqrt{\frac{25}{9}}$ 139. $\sqrt{289}$

Write each as a fraction.

140. 61% 141. 50% 142. 5% 143. 14.5%

Write each as a percent.

144. $\frac{2}{3}$ 145. $16\frac{3}{5}$ 146. $\frac{5}{9}$ 147. $4\frac{5}{6}$ 148. $\frac{7}{8}$

Write each number in scientific notation.

149. 0.34 150. 6.8 151. 0.0006 152. 34500 153. 5250

154. 60000 155. 26000 156. 0.00002 157. 674000 158. 0.00003

Perform the following conversions:

159. 18 ft. = _____ yd. 160. 180 mm. = _____ m.

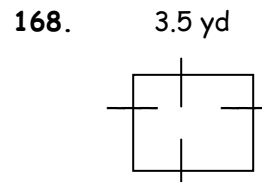
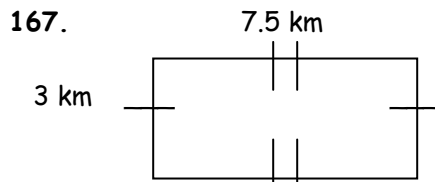
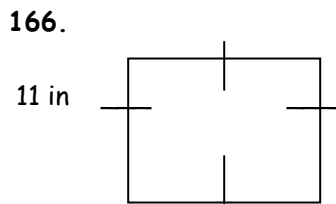
161. 5280 yd. = _____ mi. 162. 370 mL. = _____ L.

163. 5 qt. = _____ c.

164. 4 gal. = _____ qt.

165. 130 g. = _____ kg.

Find the perimeter and area of each figure:



169. A rectangle with length 7 meters and width 11 meters.

170. A square with length 4.5 inches.

171. A rectangular sandbox with length 2.4 meters and width 1.6 meters.

Graph the following sets of ordered pairs on the Cartesian Coordinate System provided:

172. (-2, 4)

173. (3, -3)

174. (-6, 0)

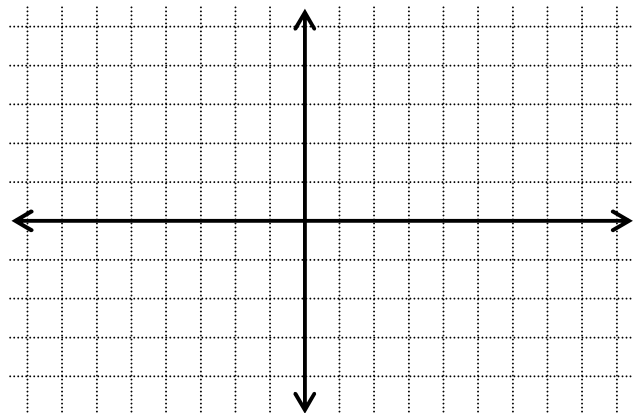
175. (-3, -1)

176. (0, -2)

177. (5, 3)

178. (4, 0)

179. (0, 5)



The following are the only sections in which you may use a calculator.

Solve each problem.

180. 92 is what percent of 85?

181. 63% of what is 110.2?

182. 47% of what is 84?

183. 25 is what percent of 114?

184. What is 68% of 59?

185. 23 is 39% of what?

186. What is 48% of 21.8?

187. 23.5 is what percent of 75?

188. What percent of 107 is 76.1?

Find each percent change. Round to the nearest tenth of a percent. State if it is an increase or decrease.

189. From 38 to 3

190. From 71 to 84

191. From 79 to 40.9

192. From 74 to 88