

ALGEBRA I
ALGEBRA I (H)
SUMMER PACKET

Instructions: These problems are a review for Algebra I. A grade will be given for their completion upon your return to school. They are DUE the first full day of classes.

Work all problems on loose-leaf paper. Make sure that all pages and problems are numbered correctly. Show all of your work. Write neatly. BOX all final answers.

I. What must g be for each statement to be true?

1) $6 \div g = 1$

2) $76 = 19g$

3) $128 - g = 63$

4) $28 + g = 20 + g + 8$

5) $\frac{4}{11} - g = -\frac{3}{11}$

6) $\frac{18}{5} + g = 4$

II. Write each of these as a single whole number.

7) $(82 + 64) \div (31 - 29)$

8) $16(27 - 16)$

9) $(2800 \div 400) \times (20 \times 40)$

10) $25 - (8 - 5)(12 \div 4)$

11) $12(-3)(-2) + 18 \div (-9)$

12) $4^2 - 5^2$

13) $3j - (-6j) + 4j - 8j - 5j$

14) $4(6 - 8) - (12 \div (-6))$

15) $(-3)^2 - 600\% - 2^2$

16) $\frac{7}{12}$ of 84

17) $\frac{2.88}{1.6}$

18) $\frac{12\frac{1}{2}\%}{.875}$

19) $5.2 - 0.2((3 - 2.8) - (4 - 4.8))$

III. Fill in the blanks with numbers to complete the following problem.

20)
$$\begin{array}{r} 7 _ \\ \times _ 4 \\ \hline _ 9 2 \\ _ 6 \\ \hline _ _ 5 2 \end{array}$$

IV. Answer the following questions

- 21) Prime factor 360
- 22) How many zeros are in two hundred million?
- 23) What are all of the prime factors of 12?
- 24) If you and I each pick a number and mine is 13 more than yours, what is yours if mine is 38?
- 25) $72 + 18 = 90$ means the same as $18 = \underline{\quad} - \underline{\quad}$
- 26) What is the biggest divisor of 218?
What is the smallest?
What is the second biggest?
- 27) What is 6 more than the product of 2 and 8?
- 28) The sum of three odd numbers is (even or odd)?
- 29) A bag of rice weighs 20 oz. How many pounds of rice are there in 8 bags?
- 30) Is $0 + 24$ a number?
- 31) Is $24 \div 0$ a number?
- 32) List all prime numbers between 30 and 60.
- 33) Find all divisors (factors) of 84.
- 34) Write 5 as the sum of 3 whole numbers in as many ways as possible.
- 35) What is the opposite of -13?
- 36) What two numbers have an absolute value of 14?
- 37) If you average 60 mi/hr on the 330 mile trip to Mobile, Alabama, how long does it take to get there?
- 38) The sum of four negative numbers is (positive or negative)?
- 39) If $x < 2$ then $x - 4$ is (negative or positive)?
- 40) Two is the only even prime number. (true or false)
- 41) The sum of two odd numbers is odd. (true or false)
- 42) Prime factor 144.
- 43) How many integers are bigger than -6 and also less than 3?
- 44) Which of the following fractions is less than $\frac{1}{2}$? $\frac{9}{16}, \frac{23}{45}, \frac{7}{17}, \frac{40}{41}$
- 45) Arrange the following numbers in order from smallest to largest. $-\frac{3}{4}, \frac{5}{8}, \frac{18}{19}, -\frac{5}{4}, -\frac{3}{2}$
- 46) What is meant by absolute value?
- 47) What fraction of an hour is 35 minutes?
- 48) What must be added to $\frac{2}{3}$ to get 0?
- 49) What must be multiplied times $\frac{2}{3}$ to get 1?
- 50) What must be added to $1\frac{3}{4}$ to get 5?

- 51) What is the nearest integer to -76.45 ?
- 52) Write $\frac{b^3b^4}{b^5}$ using a single base and a single exponent.
- 53) Find all values for k if $|k| = -4.5$
- 54) Express $7a + 4b + 3a - 2b$ in simplest form.
- 55) What integer is closest to $(2.4)^2$

V. Put the symbol $>$ or $<$ in each blank

- 56) -3 ___ 2
- 57) -1.6 ___ -1.8

VI. Find the distance between the following pairs of numbers on the number line.

- 58) 0 and -18
- 59) -6 and 14
- 60) -18 and -20
- 61) $1\frac{3}{8}$ and $-3\frac{7}{8}$
- 62) $6\frac{1}{17}$ and $19\frac{1}{17}$
- 63) $-\frac{3}{4}$ and $1\frac{1}{2}$

VII. Find all values for p in each problem.

- 64) $7p = 0$
- 65) $5 = -(-p)$
- 66) $|p| = 5$
- 67) $p = 23 \div 0$
- 68) $12 + p - 5 = -4$
- 69) $-p - 4 = 0$
- 70) $0 \div p = 0$

VIII. Write these statements mathematically.

- 71) 16 divided by m .
- 72) The product of 2 and the opposite of j .
- 73) The quotient of -16 and y .
- 74) n is greater than -6

IX. Perform these operations.

75) $-7 - (-3)$

76) $-11 - 19$

77) $-5 - 6$

78) $-2 - (-3) + 4 - (-8) + 7 - 2$

79) $-16 - 18 - 17 + 19 - 20 - 12$

80) $-(20 + 5) - (1 - 7) + (3 - 4) - (-7 + 9) - (0 - 1)$

81) $(-3)(-5)$

82) $-3 - 5$

83) $(-3 + (-6)) + (-(-3 + 6))$

84) $-2(6 - 8)$

85) $5 - 3(2 - (1 - 4))$

86) $(2 - 6)^2 + (3 - 5)^2$

87) $-3 - (-3 - 3)$

88) $-2 \cdot 3^2 + 5$

89) $-2 - 3(1 - 4)^2$

90) $\frac{4(8-18)}{2(10-5)}$

91) $8^2 - 7^2$

92) $4 - 6 + (-2)$

93) $2 - |3 + 7|$

94) $-\frac{4}{5} - \left(-\frac{8}{5}\right) + \left(-\frac{3}{5}\right)$

95) $4\frac{1}{8} + 3\frac{7}{8} - 2\frac{3}{8} - 1\frac{5}{8}$

96) $-1\frac{2}{3} - \frac{2}{3} + 2\frac{1}{3}$

97) $\frac{5}{8} - \frac{15}{16}$

98) $7\frac{1}{4} - 4\frac{2}{3}$

99) $\left(3\frac{5}{8}\right)\left(2\frac{2}{3}\right)\left(1\frac{1}{2}\right)$

100) $18 \div 2\frac{2}{3}$

101) $\left(2 \cdot \frac{19}{6}\right) \div 6\frac{1}{3}$

102) $\frac{5}{8} \cdot \frac{4}{15} \cdot \frac{12}{25} \cdot \frac{5}{18}$

103) $5.2 - 8.6 + 3.4 - 17.9$

- 104) $(5.25)(6.4)$
105) $0.048 \div .12$
106) $1.6c - 3.4c - (-4.8c)$

X. Word Problems

- 107) If 6 is added to a certain number, the sum is -14. What is the number?
- 108) Acme Brick Co. produces 28,800 bricks per day. They are packaged by the gross (144). How many gross are packaged in a normal work week (Mon-Fri)?
- 109) The sum of 20 and k is 0. What is k ?
- 110) Harry spent \$60.50 for gas on his trip to Tennessee. If gas costs averaged \$1.10 per gallon, how many miles did he travel if his car averaged 25 miles/gallon of gas?
- 111) The ratio of boys to girls in Mr. Smith's Calculus class is 1 to 2. If there are 24 students in the class, how many are girls?
- 112) A printer prints one page in 3 minutes. How many pages could it type in 2 hours?
- 113) Four out of 10 high school seniors at a large high school smoke. If 120 seniors smoke, how many don't smoke?
- 114) There are 200 students at Sibling High and 120 are girls.
- What is the ratio of girls to students?
 - What is the ratio of girls to boys?
 - What is the ratio of boys to students?
 - Seven out of ten of the students at Sibling High participate in athletics. How many students do not participate?
- 115) Sarah has committed to running 15 miles per week. If she runs $2\frac{1}{4}$ miles on Monday, $3\frac{1}{8}$ miles on Tuesday, $1\frac{1}{2}$ miles on Wednesday, and 4 miles on Thursday, how many miles must she run on Friday to keep her commitment?
- 116) An 18 inch rope is divided into sections that are each $2\frac{1}{4}$ long. How many sections are made?
- 117) A recipe calls for $2\frac{1}{2}$ cups of milk for every 2 cups of flour. How many cups of milk are needed for 7 cups of flour?
- 118) For a 500 miles trip, Joey averaged 30 mi/gal of gasoline. If the average price per gallon was \$1.09, how much money did Joey spend on gas?
- 119) A gymnasium is 30.5 m long by 50.5 m wide. What is its area?

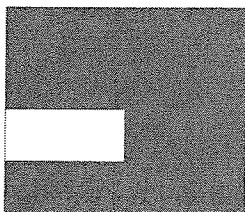
- 120) Mary wrote 4 checks this week, for \$18.32, \$24.78, \$96.00, and \$74.78. If her balance at the beginning of the week was \$62.00 and she deposited \$120.45, what was her balance at the end of the week?
- 121) Peggy commutes to 5 different schools, each on a different day of the week. If they are 15.5 miles, 3.6 miles, 13.4 miles and 8 miles from her home and she is paid \$0.25 per mile as a travel fee, what is her travel fee for the week?
- 122) 72,000 Americans were killed in the Vietnam War. This represents 18% of the troops sent to Vietnam. How many troops were sent?
- 123) A congressional committee consists of 12 Democrats and 13 Republicans. What percent of the committee is Republican?
- 124) Fresh-O Supermarket sold 960 cases of Diet Coke last week. This represents $\frac{3}{8}$ of all the cases of soft drinks sold. How many cases did Fresh-O sell last week?
- 125) Out of 5000 Americans surveyed in 1970, 12% considered themselves environmentalists. In 1990, out of 5000 Americans surveyed, 38% considered themselves to be environmentalists. How many more environmentalists were there in 1990 than 1970?
- 126) If an acceptable tip is 15% of the bill, what should be the tip on a \$50 restaurant tab?
- 127) Enrollment in the Amite County School District went from 40,000 students in 1980 to 35,000 in 1990. What percent decrease was this?
- 128) Harry of "Honest Harry's Used Cars" buys a 1976 Pinto for \$600. If he wants to make 250% profit on this bag of bolts, how much should he sell it for?
- 129) Marie received a 20% pay raise and her salary is now \$14.40/hr. What was her original salary?

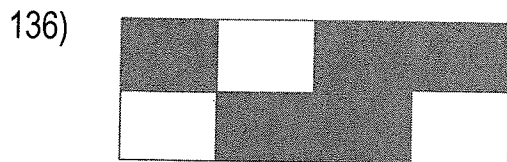
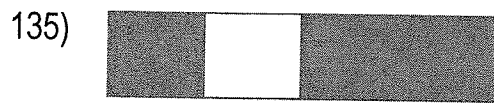
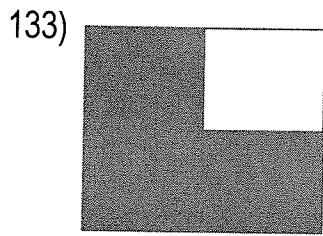
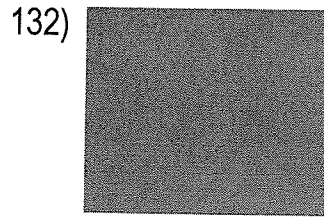
XI. Solve for x .

130) $2 - x + 3 = x + 4 - 3$

XII. What fractional part is represented by the shaded region in each figure below?

131)





XIII. Write each number as a decimal (terminating or repeating).

137) $\frac{22}{25}$

138) $3\frac{1}{6}$

XIV. Write each decimal as a fraction in simplest form.

139) 0.025

140) $7.\bar{3}$

XV. Express answers as fractions.

141) $3.2 - \frac{2}{3} \left(\frac{3}{6} \right) - \frac{4}{5}$

142) $7.74 + 6\frac{1}{25} - 8\frac{4}{3}$

XVI. Express answers as decimals.

143) $\frac{1}{2} - \frac{5}{8} - \frac{1}{4}$

144) $0.76 + \frac{3}{4} + 1\frac{1}{2}$

XVII. Complete the following chart.

Fraction	Decimal	Percent
$\frac{3}{5}$	145)	146)
147)	4.26	148)
149)	150)	.02%

XVIII. Find the missing value.

151) What is $37\frac{1}{2}\%$ of 64?

152) 160 is 250% of what number?

153) 32 is what percent of 32,000?