

Summer Assignment for Students Going Into 9th Grade Algebra 1

Directions:

- ❑ Complete this packet one topic at a time following the directions below:
 - ❑ Complete all problems in the section, showing all of your work. If there is no work to show, write a sentence or two explaining your answer. **You may not use a calculator on this assignment. Only questions with work and/or explanations will be counted as complete.**
 - ❑ Write your final answer/solution on the chart on the next page.
 - ❑ Check your answers using the answer key on the last page of this packet.
 - ❑ If a question is wrong, that's okay! Check your work for any mistakes and try again :).
 - ❑ If multiple questions are wrong or you don't understand how to arrive at the correct answer, it's probably time to get extra help (see below).
- ❑ If you need extra help you should:
 - ❑ Use Khan Academy as a resource to refresh your understanding of the topics. There are mini-units on Khan Academy with practice problems that might be helpful.
 - ❑ Reach out to a friend that might be able to help explain a concept to you - remember, getting help is ok, but getting answers is not - we want you to understand the material in this assignment as you will be using it moving forward this year and for the years to come!!
- ❑ Bring this packet with you on the first day of school.
 - ❑ While we will be looking at the chart to see trends across the class, your grade will be based on **completion** not correct answers.
 - ❑ Please draw a ☆ next to any topic you would like your teacher to review with you or the whole class.

Name: _____

Solution/Reflection Chart

Topic	Question	My Answer	Correct?	Topics
Place Value	1			Place Value
	2			Place Value with Decimals
	3			
	4			
Comparing and Ordering Numbers	5			Comparing Fractions
	6			Comparing Decimals
	7			Comparing Negative Numbers
	8			
	9			
	10			
	11			
	12			
	13			
Fraction Arithmetic	14			Adding/Subtracting Fractions
	15			Multiplying/Dividing Fractions
	16			
	17			
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	22			
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	25			

<p>Converting Between Fractions, Decimals, and Percentages</p>	26			<p>Converting Between Fractions, Decimals and Percentages</p>
	27			
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	32			
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	34			
	35			
	36			
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	39			
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	43			
<p>Percentages Problem Solving</p>	44			<p>Percent Word Problems</p>
	45			
	46			
	47			
	48			
<p>Integer Arithmetic</p>	49			Adding/Subtracting Integers
	50			Multiplying/Dividing Integers
	51			
	52			

Integer Arithmetic Cont.	53			
	54			
	55			
	56			
	57			
	58			
	59			
	60			
	61			
	62			
	63			
64				
Data Analysis	65			Mean/Median/Mode
	66			
Problem Solving	67			
	68			
	69			
	70			
Solving One-Step Equations	71			One-Step Equations
	72			
	73			
	74			
	75			

	76			
	77			
Evaluating Expressions	78			Evaluating Expressions
	79			
Absolute Value	80			Absolute Value
	81			
Area & Perimeter	82			Area/Perimeter
	83			
	84			

REMINDER: Please draw a ☆ next to any topic you would like your teacher to review with you or the whole class upon returning to school in the fall

Topic 1: Place Value

What is the value of the underlined digit in the following numbers?

1. 6,665,162

2. 0.09785

Round the following numbers to the given place value:

3. 10.065 to the nearest hundredth

4. 837.432 to the nearest whole number

Topic 2: Comparing and Ordering Numbers

Fill in the blank with the correct symbol:

> or < or =

5. 7 _____ $\frac{15}{2}$

6. -8 _____ -3

7. 9 _____ $\frac{27}{3}$

8. $-\frac{1}{2}$ _____ $-\frac{3}{4}$

9. -1.8 _____ -1.3

10. $\frac{1}{4}$ _____ 0.25

Order the following from least to greatest:

11. -10, 3, 3.4, -7, 8

12. 0.73, 0.7, 0.45, -0.63, -0.1

13. $2\frac{2}{3}$, 2.6, 2.04, $\frac{5}{2}$, 2

Topic 3: Fraction Arithmetic

Simplify each expression. Write all answers in simplest form:

14. $\frac{1}{3} + \frac{1}{3}$

15. $\frac{3}{4} + \frac{1}{6}$

16. $1\frac{1}{4} + \frac{3}{2}$

17. $\frac{5}{6} - \frac{1}{6}$

18. $2\frac{1}{2} - \frac{1}{4}$

19. $\frac{4}{5} - \frac{1}{2}$

20. $2\frac{1}{3} \cdot \frac{2}{5}$

21. $\frac{4}{5} \cdot \frac{2}{3}$

22. $\frac{5}{6} \cdot \frac{2}{3}$

23. $\frac{1}{2} \div \frac{3}{4}$

24. $\frac{4}{5} \div \frac{3}{2}$

25. $1\frac{3}{4} \div \frac{3}{4}$

Topic 4: Converting Between Decimals, Fractions, and Percentages

Convert the following fractions to decimals. Round to the nearest hundredth:

26. $\frac{4}{5}$

27. $\frac{3}{7}$

28. $\frac{5}{8}$

Convert the following decimals to fractions:

29. 0.125

30. $0.\overline{3}$

31. 0.05

Convert the following decimals to percentages:

32. 0.65

33. 2.85

34. 0.08

Convert the following percentages to decimals:

35. 8%

36. 7.12%

37. 23.78%

Convert the following fractions to percentages:

38. $\frac{2}{5}$

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

40. $\frac{2}{3}$

Convert the following percentages to fractions:

41. 20%

42. 8%

43. 7.5%

Topic 5: Percentage Problem Solving

44. What number is 15% of 60?

45. 66 is 11% of what number?

46. 308 is what percent of 350?

47. A \$150 jacket is going on sale for a 25% discount. How much will the jacket cost on sale?

48. Jim bought 3 CDs at a cost of \$14.99 each. What will he pay, including a 7% sales tax?

Topic 6: Integer Arithmetic

Perform the indicated operations:

49. $9 - 20$

50. $-20 + (-3)$

51. $40 * (-2)$

52. $-4 - (-3)$

53. $(-3)^*(-2)$

54. $37 - 37$

55. $36 + (-11)$

56. $(-22) - 2$

57. $(-22) + (-2)$

58. $9*(7 + 5 - 3)$

59. $8 - 33 + (2 - 25) + 48$

60. $45 + 9 + 6 * 5$

61. $5 + (21 + 7)*2$

62. $27 + 3 * 2 - 7$

63. $20 - 2^3 + 5$

64. $(16 - 9)^2$

Topic 7: Data Analysis

65. Determine the mean, median, mode, and range of the numbers below:

168, 149, 27, 44, 11, 98, 44, 138, 74, 149, 44, 110

Mean: _____ Median: _____ Mode: _____ Range: _____

66. In the first game of the season, the Lancers scored 18 points. In the second game, they scored 21 points. What is the average number of points scored in the 2 games?

Topic 8: Problem Solving

67. On a cold Chicago day the temperature was 7 degrees. Over the next three hours it dropped 4 degrees per hour. What was the temperature after 3 hours?
68. A pet shelter noticed that during one month they adopted twice as many dogs as they did cats. If they adopted 17 cats, how many dogs were adopted?
69. If 4 bottles of juice cost \$7, how much would 9 bottles cost?
70. Stan drove 162 miles in 3 hours. What is his speed in miles per hour?

Topic 9: Solving One-Step Equations

Solve each equation showing all work:

71. $x + 22 = 105$

72. $\frac{x}{4} = 24$

73. $y - 7 = 30 + 12$

74. $30k = 420$

75. $x - 8.75 = 11.6$

76. $\frac{2}{5} + x = \frac{9}{10}$

77. $\frac{1}{3}x = 12$

Topic 10: Evaluating Expressions

78. $3x - 17$ when $x = 8$

79. $39 + 5y$ when $y = -2$

Topic 11: Absolute Value

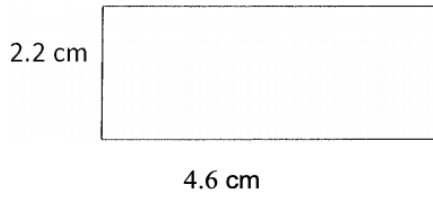
Fill in the blank with $<$, $>$, or $=$

80. $|-5|$ _____ 3

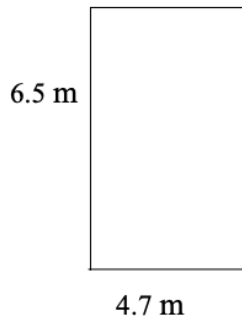
81. $|7.3|$ _____ $|-7.3|$

Topic 12: Area & Perimeter

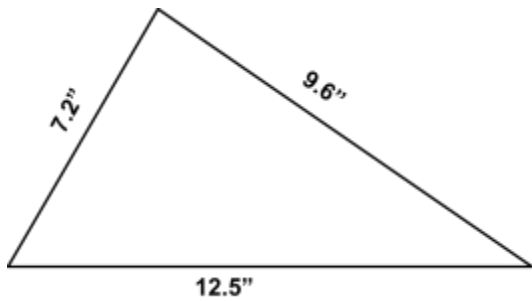
82. Determine the perimeter of the rectangle below:



83. Determine the area of the rectangle below:



84. Determine the perimeter of the triangle below:



Answer Key:

1. **60,000 or sixty thousand**
2. **.007 or seven thousandths**
3. **10.07**
4. **837**
5. **<**
6. **<**
7. **=**
8. **>**
9. **<**
10. **=**
11. **-10, -7, 3, 3.4, 8**
12. **-0.63, -0.1, 0.45, 0.7, 0.73**
13. **2, 2.04, $\frac{5}{2}$, 2.6, $2\frac{2}{3}$**
14. **$\frac{2}{3}$**
15. **$\frac{11}{12}$**
16. **$2\frac{3}{4}$**
17. **$\frac{2}{3}$**
18. **$2\frac{1}{4}$**
19. **$\frac{3}{10}$**
20. **$\frac{14}{15}$**
21. **$\frac{8}{15}$**
22. **$\frac{5}{9}$**
23. **$\frac{2}{3}$**
24. **$\frac{8}{15}$**
25. **$2\frac{1}{3}$**
26. **.80**
27. **.43**
28. **.63**
29. **$\frac{1}{8}$**
30. **$\frac{1}{3}$**
31. **$\frac{1}{20}$**
32. **65%**
33. **285%**
34. **8%**
35. **.08**
36. **.0712**
37. **.2378**
38. **40%**
39. **75%**
40. **66.67%**
41. **$\frac{1}{5}$**
42. **$\frac{2}{25}$**
43. **$\frac{3}{40}$**
44. **9**
45. **600**
46. **88%**
47. **\$112.50**
48. **\$48.12**
49. **-11**
50. **-23**
51. **-80**
52. **-1**
53. **6**
54. **0**
55. **25**
56. **-24**
57. **-24**
58. **81**
59. **0**
60. **84**
61. **61**
62. **26**
63. **17**
64. **49**
65. **Mean: 88**
Median: 86
Mode: 44
Range: 157
66. **19.5**
67. **-5 degrees**
68. **34 dogs**
69. **\$15.75**

70. $\frac{54 \text{ miles}}{1 \text{ hour}}$
71. $x = 83$
72. $x = 96$
73. $x = 49$
74. $x = 14$
75. $x = 20.35$
76. $x = \frac{1}{2}$
77. $x = 36$
78. 7
79. 29
80. >
81. =
82. Perimeter = 13.6 cm
83. Area = 30.55 m²
84. Perimeter = 29.3 inches