

POND ROAD MIDDLE SCHOOL

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KNIGHTS

"TODAY'S LEARNERS, TOMORROW'S LEADERS"

Summer 2019

Dear Parents/Guardians,

Congratulations on the completion of your child's 7th grade year! As your child prepares for the middle school experience, it is important that he/she maintains the skills necessary to be successful. The mathematics teachers have prepared a summer packet for the students to complete. This will enhance and strengthen their skills.

This packet will be checked on the first day of school and counted as a homework grade. Please complete the packet in its entirety. Please do not leave any questions blank. All work should be shown for every question.

WE STRONGLY RECOMMEND WAITING UNTIL THE LATTER PART OF THE SUMMER TO COMPLETE THIS PACKET AS THAT WILL HELP THE STUDENTS BEST REFRESH THEIR SKILLS PRIOR TO SCHOOL BEGINNING IN SEPTEMBER!!!

Please double check that you have printed out the correct summer packet that aligns with the class your child will be taking in 8th grade. This packet is for students who will be taking **Algebra 8** or **Accelerated Algebra 8** in 8th grade.

Some example problems have been provided for reinforcement as well as help in completing this summer packet. Please click on the link for additional help or you may visit the following websites.

www.aaamath.com

www.coolmath.com

www.funbrain.com

www.kidsnumbers.com

www.mathleague.com

www.khanacademy.org

www.mathplayground.com

Enjoy your summer break and we look forward to seeing you again in September!

Rising 8th Grade Summer Packet

For students entering Algebra 8 or Accelerated Algebra 8

PLEASE WRITE ALL ANSWERS ON THE LINES AT THE RIGHT.

SHOW ALL WORK FOR EVERY PROBLEM.

USAGE OF A CALCULATOR IS NOT ALLOWED UNTIL PART 5.

PART 1 – ORDER OF OPERATIONS

Simplify. WATCH YOUR SIGNS!!! (Example: <https://goo.gl/qO2VUK>)

1) $8 - 3 + 9 - 2$

2) $(-9)(-2)(3)$

1. _____

2. _____

3) $-30 \div -5$

4) $|4 - 13|$

3. _____

4. _____

5) $(-5)^2$

6) -3^2

5. _____

6. _____

7) -2^5

8) $(-7)^3$

7. _____

8. _____

9) $12 - 6 \div 2 \cdot 3$

10) $9 - (6 + 4^2)$

9. _____

10. _____

11) $14 + |-2 - 5|$

12) $15 - 3 + 2 - |-7|$

11. _____

12. _____

13) $20 - \sqrt{100} + 2(5 - 12)$

14) $\frac{5 - (2 - 5)^2}{4 + 24 \div 6(3)}$

13. _____

14. _____

PART 2 – RATIONAL NUMBERS

15) What is the difference between integers and rational numbers?

16) What is an irrational number?

17) Using the following data set, state the numbers that are rational, but not integers.

$$\{-7, 4\frac{1}{3}, 0.75, 9\sqrt{2}, \frac{30}{6}, -13, \sqrt{121}\}$$

18) Which number set(s) does $-\sqrt{25}$ belong to? Circle all that apply.

Real Natural Rational Whole Integer Irrational

Compare using $<$, $>$, or $=$. Show work to justify your answer.

19) $\frac{3}{7}$ _____ 0.43

20) -3.54 _____ $-3\frac{5}{9}$

Simplify. WATCH YOUR SIGNS!!!

21) $3.87 + 1.2 + 9.05$

22) $23.34 - 8.95$

21. _____

22. _____

23) $(1.42)(-7.2)$

24) $2814 \div 0.14$

23. _____

24. _____

Simplify. Write your answers as proper or improper fractions. NO MIXED NUMBERS!

(Example: <http://www.showme.com/sh/?h=NCF0t3w>)

25) $-2\frac{2}{5} - 3\frac{4}{9}$

26) $27\frac{3}{4} + 11\frac{3}{7}$

25. _____

26. _____

27) $-14\frac{8}{9} + 5\frac{1}{2}$

28) $23\frac{1}{4} - 7\frac{4}{5}$

27. _____

28. _____

29) $-18 + 6\frac{4}{11}$

30) $5\frac{3}{5} \cdot -3\frac{4}{7}$

29. _____

30. _____

31) $\frac{32}{48} \cdot \frac{60}{64}$

32) $-5 \cdot 1\frac{1}{7}$

31. _____

32. _____

33) $5\frac{5}{8} \div 5$

34) $-8\frac{1}{3} \div -4\frac{4}{5}$

33. _____

34. _____

PART 3 – EXPRESSIONS AND EQUATIONS

Translate the following expressions and equations.

35) Eight more than triple a number 35. _____

36) The quotient of twelve and a number is five. 36. _____

37) Seven times the sum of a number and two 37. _____

38) Forty is the product of a number and nine. 38. _____

Evaluate the following if: $w = 3$, $x = -5$, $y = -2$ and $n = 7$

(Example: <http://www.showme.com/sh/?h=w3kFme8>)

39) $wx - yn$ 40) $9w - x$ 39. _____

40. _____

41) $x^2 - 4y$ 42) $\frac{wxy + ny}{-2xy}$ 41. _____

42. _____

Simplify the following expressions

43) $8x - 9 + 2x + 3 - 14x$ 44) $4n^2 - 2n + 2n^2 + 7n$ 43. _____

44. _____

45) $5(2x - 3) + 6$ 46) $-3(7x - 4) + 2(6x - 5)$ 45. _____

46. _____

- 47) Show how you would check to see if **7** is a solution to the given equation.
DO NOT SOLVE THE EQUATION!!!

$$11(2x - 3) = 3x + 42 + 8x$$

Solve the following equations. Show all work.

(Example: <http://www.showme.com/sh/?h=ujv9Ck4>)

48) $5x + 9 = 44$

49) $-50 = -3x - 14$

48. _____

49. _____

50) $7 + \frac{3}{5}x = 4$

51) $-5 + \frac{x}{4} = 11$

50. _____

51. _____

52) $3 + 4(2x + 5) = 39$

53) $2 = 2x - 6x + 3x + 9$

52. _____

53. _____

54) $3x + 8 = 5x - 20$

55) $-6x + 20 = 2x$

54. _____

55. _____

Write and solve an equation for the following.

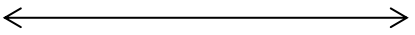
- 56) Baseballs cost \$4 each. If you buy some baseballs and a \$60 bat and spend \$124, how many baseballs did you buy?

56. _____

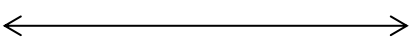
PART 4 – INEQUALITIES

Graph the following inequalities on the number line

57) $x < -5$

57. 

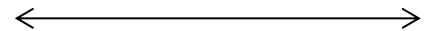
58) $2 \geq x$

58. 

Write an inequality for the following scenarios. Graph on the number line.

- 59) The largest amount of money in your bank account was \$143.
Write an inequality for the possible amount of money, m , in your bank account.

59. _____



- 60) The smallest species of frog is 7.7 millimeters long.
Write an inequality for the height, h , of all the **other** frog species.

60. _____



Solve the following inequalities. Show all work. (Example: <https://goo.gl/gLwqE0>)

61) $4 + 2x \leq -20$

62) $-7x + 7 > 21$

61. _____

62. _____

63) $4 + \frac{x}{3} \leq 20$

64) $21 < 9 - \frac{3}{4}x$

63. _____

64. _____

**YOU SHOULD USE A CALCULATOR
FOR THE REST OF THE PACKET**

PART 5 – RATES/RATIOS/PROPORTIONS

Find the unit rate

65) work for 12 hours and earn \$140 65. _____

66) travel 900 miles in 15 hours 66. _____

Solve the following proportions. Round answer to the nearest tenth.

67) $\frac{3}{7} = \frac{11}{x}$ 68) $\frac{8y}{3} = \frac{191}{20}$ 67. _____

68. _____

69) If Susan can read 40 pages in 12 minutes, how many pages can she read in 50 minutes?

69. _____

70) The key on a map says 2 inches equals 7 miles. If two cities are 9 inches apart on the map, how far apart are they in real life?

70. _____

PART 6 – PERCENTS

Convert to a decimal.

71) $\frac{7}{20}$

72) 31%

73) $\frac{4}{9}$

71. _____

72. _____

73. _____

Convert to a fraction.

74) 3.25

75) 8%

76) 0.125

74. _____

75. _____

76. _____

Convert to a percent.

77) 0.84

78) $\frac{2}{3}$

79) 6.12

77. _____

78. _____

79. _____

Compute exactly using fractions (not proportions)

80) $33.\bar{3}\%$ of 15

81) 75% of 60

80. _____

81. _____

Solve using a percent equation or a percent proportion.

82) 56 is what percent of 80?

83) 19 is 20% of what number

82. _____

83. _____

Solve the following problems using any method.

- 84) 30 students in grade 8 finished their summer packet before August 15.
This was 12% of all the students. How many students are in grade 8?

84. _____

- 85) There are 1,200 people at the beach. If 88% of them went in the water,
how many people **DID NOT** go in the water?

85. _____

- 86) A \$800 T.V. is on sale for 15% off. What is the cost of the T.V.?

86. _____

- 87) You go out to dinner and the bill is \$45.12. You want to leave
an 18% tip. How much money should you leave?

87. _____