

# POND ROAD MIDDLE SCHOOL

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*"TODAY'S LEARNERS, TOMORROW'S LEADERS"*

Summer 2020

Dear Parents/Guardians,

Congratulations on the completion of your child's 7<sup>th</sup> 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 8<sup>th</sup> grade. This packet is for students who will be taking **Algebra I** or **Accelerated Algebra I** in 8<sup>th</sup> 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](http://www.aaamath.com)  
[www.coolmath.com](http://www.coolmath.com)  
[www.funbrain.com](http://www.funbrain.com)  
[www.kidsnumbers.com](http://www.kidsnumbers.com)  
[www.mathleague.com](http://www.mathleague.com)  
[www.khanacademy.org](http://www.khanacademy.org)  
[www.mathplayground.com](http://www.mathplayground.com)

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

Name: \_\_\_\_\_

2019

## Rising 8<sup>th</sup> Grade Summer Packet

### For students entering Algebra I or Accelerated Algebra I

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?

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16) What is an irrational number?

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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

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

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

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

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**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!!!**

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

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**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?

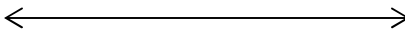
56. \_\_\_\_\_

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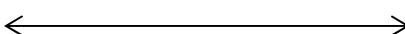
## **PART 4 – INEQUALITIES**

Graph the following inequalities on the number line

57)  $x < -5$

57. 

58)  $2 \geq x$

58. 

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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. \_\_\_\_\_



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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. \_\_\_\_\_

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**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. \_\_\_\_\_

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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. \_\_\_\_\_

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**Convert to a fraction.**

74) 3.25

75) 8%

76) 0.125

74. \_\_\_\_\_

75. \_\_\_\_\_

76. \_\_\_\_\_

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**Convert to a percent.**

77) 0.84

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

79) 6.12

77. \_\_\_\_\_

78. \_\_\_\_\_

79. \_\_\_\_\_

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**Compute exactly using fractions (not proportions)**

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

81) 75% of 60

80. \_\_\_\_\_

81. \_\_\_\_\_

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**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. \_\_\_\_\_