Name:_____   Elementary School:_____

Parent Signature:_____   Date:_____

This packet must be signed/dated by a parent/guardian upon its completion by the student whose name appears above. It will not be graded without a parent's signature.

Ridgefield Park Public Schools

Summer Math 7 Packet
For
Students
Entering Grade 7

- **Complete the following mathematics review packet and hand it in to your 7th grade math teacher on the first day of school in September.**

- **It will be graded and counted as a 1st Marking Period quiz grade...based on 100 points! Record your answers on the provided Answer Sheet.**

- **Unanswered questions and answers without work shown will be marked incorrect. <u>All work must be shown on separate sheets of paper that you attach.</u>** Each correct answer will receive 1 point for a total of 75 points. The attached work will be worth 25 points.

- **Beginning on the 2nd day of school the packet will be marked lower by 5 points per day it is late until such time as you would have 0 points.**

Please attach this cover page and answer sheet to the front of the materials you will be handing in to your 7th grade math teacher on the first day of school.

Name:_____   Elementary School:_____

Math 7 Summer Packet Answer Sheet

Record your answer for each question on the lines provided below. (1 point each)
All work must be shown on separate sheets of paper that you attach. (25 points)

1]_____	26] _____	51]_____
2]_____	27] _____	52]_____
3]_____	28] _____	53]_____
4]_____	29] _____	54]_____
5]_____	30] _____	55]_____
6]_____	31] _____	56]_____
7]_____	32] _____	57]_____
8]_____	33] _____	58]_____
9]_____	34] _____	59]_____
10]_____	35] _____	60]_____
11]_____	36] _____	61]_____
12]_____	37] _____	62]_____
13]_____	38] _____	63]_____
14]_____	39] _____	64]_____
15]_____	40] _____	65]_____
16]_____	41] _____	66]_____
17]_____	42] _____	67]_____
18]_____	43] _____	68]_____
19]_____	44] _____	69]_____
20]_____	45] _____	70]_____
21]_____	46] _____	71]_____
22]_____	47] _____	72]_____
23]_____	48] _____	73]_____
24]_____	49] _____	74]_____
25]_____	50] _____	75]_____

Unanswered questions and answers that require work shown will be marked incorrect.

Use the first four pages of this packet as a guide for completing the questions that follow.

Adding and Subtracting Decimals

Subtract 8.7 − 4.97.

① Round to estimate.

$$8.7 \rightarrow 9$$
$$-\,4.97 \rightarrow -5$$
$$\overline{4}$$

② Line up the decimal points.

$$8.7$$
$$-\,4.97$$
$$\overline{}$$

③ Write zeros. Then subtract.

$$8.70$$
$$-\,4.97$$
$$\overline{3.73}$$

Compare to make sure your answer is reasonable: 3.73 is close to 4.

Multiplying Decimals

Multiply 5.43 × 1.8.

① Multiply as if the numbers were whole numbers.

② Count the total number of decimal places in the factors.

$$5.43$$
$$\times\ 1.8 \Big\}\ \textbf{3 decimal places}$$
$$4344$$
$$+\ 543$$
$$\overline{9.774} \leftarrow \textbf{3 decimal places}$$

③ Place the decimal point in the product.

Dividing Decimals

Divide 38.25 ÷ 1.5.

① Rewrite the problem with a whole number divisor.

$$1.5\overline{)38.25}$$
$$\downarrow$$

② Place the decimal point in the quotient.

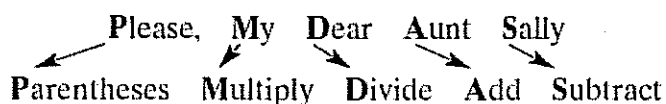$$1.5\overline{)38.2.5}$$

Move 1 place each.

③ Divide. Then check.

$$
\begin{array}{r}
25.5 \\
15\overline{)382.5} \\
-30 \\
\overline{82} \\
-75 \\
\overline{7\,5} \\
-7\,5 \\
\overline{0}
\end{array}
$$

25.5 × 15 = 382.5 ✔
Multiply to check.

Order of Operations and the Distributive Property

You can remember the order of operations using this phrase:

Please, My Dear Aunt Sally

Parentheses Multiply Divide Add Subtract

① First, do operations within parentheses.

$$7 + 8 \cdot \boxed{(5 + 3)} - 1 \qquad\qquad 3 \div \boxed{(5 - 2)} + 36$$
$$7 + 8 \cdot \quad 8 \quad - 1 \qquad\qquad 3 \div \quad 3 \quad + 36$$

② Next, multiply and divide from left to right.

$$7 + \boxed{8 \cdot 8} - 1 \qquad\qquad \boxed{3 \div 3} + 36$$
$$7 + \quad 64 \quad - 1 \qquad\qquad\quad 1 \quad + 36$$

③ Then, add and subtract from left to right.

$$\boxed{7 + 64} - 1 \qquad\qquad \boxed{1 + 36}$$
$$\quad 71 \quad - 1 \qquad\qquad\qquad 37$$
$$\quad 70$$

Mixed Numbers and Improper Fractions

An *improper fraction* is greater than or equal to 1. Its numerator is greater than or equal to its denominator.

Improper fractions
$$\frac{6}{4} \quad \frac{8}{8} \quad \frac{10}{8} \quad \frac{7}{2}$$

A *mixed number* is the sum of a whole number and a fraction.

Mixed numbers
$$1\frac{2}{3} \quad 5\frac{4}{9} \quad 3\frac{1}{2}$$

To write a mixed number as an improper fraction:

① Write the mixed number as a sum.

② Write both numbers as fractions.

③ Add the fractions.

$$3\frac{1}{2} = 3 + \frac{1}{2}$$
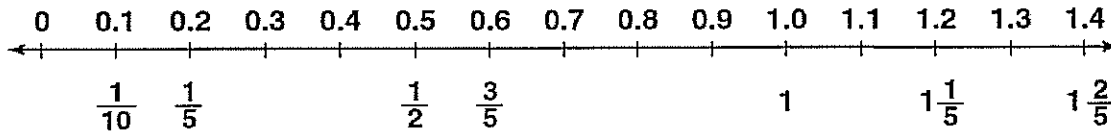$$= \frac{6}{2} + \frac{1}{2}$$
$$= \frac{7}{2}$$

To write an improper fraction as a mixed number:

① Divide the numerator by the denominator.

$$\frac{7}{2} \quad \left\{\text{Think: } 7 \div 2\right\} \qquad \begin{array}{r} 3 \\ 2\overline{)7} \\ -6 \\ \hline 1 \end{array}$$

② Write the whole number, then the remainder over the divisor.

$$\frac{7}{2} = 3\frac{1}{2}$$

Fractions and Decimals

| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 |

$\frac{1}{10}$ $\frac{1}{5}$ $\frac{1}{2}$ $\frac{3}{5}$ 1 $1\frac{1}{5}$ $1\frac{2}{5}$

To change a fraction to a decimal, divide the numerator by the denominator.

$\frac{3}{5}$ ⟨ Think: $3 \div 5$ ⟩

$$\begin{array}{r} 0.6 \\ 5\overline{)3.0} \\ -30 \\ \hline 0 \end{array}$$

$\frac{3}{5} = 0.6$

To change a decimal to a fraction:

① Read the decimal to find the denominator. Write the decimal digits over 10, 100, or 1,000.

② 0.65 is 65 *hundredths* → $\frac{65}{100}$

Use the GCF to write the fraction in simplest form.

The GCF of 65 and 100 is 5.

$$\frac{65}{100} = \frac{65 \div 5}{100 \div 5} = \frac{13}{20}$$

Comparing and Ordering Fractions

Follow these steps to *order* the fractions $\frac{1}{2}, \frac{3}{5}$, and $\frac{2}{3}$.

① Find the LCD.

② Write equivalent fractions using the LCD.

③ Order the fractions using their numerators.

The LCD of 2, 5, and 3 is 30.

$\frac{1}{2} = \frac{1 \cdot 15}{2 \cdot 15} = \frac{15}{30}$

$\frac{3}{5} = \frac{3 \cdot 6}{5 \cdot 6} = \frac{18}{30}$

$\frac{2}{3} = \frac{2 \cdot 10}{3 \cdot 10} = \frac{20}{30}$

$\frac{15}{30} < \frac{18}{30} < \frac{20}{30}$

So. $\frac{1}{2} < \frac{3}{5} < \frac{2}{3}$.

Percents, Fractions, and Decimals

To write a percent as a fraction, write a fraction with 100 as the denominator.

$45\% = \frac{45}{100}$ ← **Denominator 100**

$= \frac{45 \div 5}{100 \div 5} = \frac{9}{20}$ ← **Simplify.**

$45\% = \frac{9}{20}$

To write a decimal as a percent, multiply by 100.

Write 0.85 as a percent.

$0.85 \cdot 100 = 85$

$0.85 = 85\%$

To write a percent as a decimal, divide by 100.

Write 46% as a decimal.

$46 \div 100 = 0.46$

$46\% = 0.46$

Applications of Percent

Finding Sales Tax

sales tax = percent of tax · purchase price

Find the amount of sales tax on a television that costs \$350 with an 8% sales tax.

sales tax = 8% · \$350
sales tax = 0.08 · 350
sales tax = 28

The sales tax is \$28.

How much does the television cost with sales tax?

\$350 + \$28 = \$378

Evaluating and Writing Algebraic Expressions

To evaluate an *expression*, substitute a value for the *variable* and compute.

Evaluate $5y - 8$ for $y = 7$.

$$5y - 8$$
$$5 \times 7 - 8 \quad \leftarrow \text{Substitute } y \text{ with 7.}$$
$$35 - 8 = 27 \quad \leftarrow \text{Compute.}$$

You can use key words to write a word phrase for an algebraic expression.

$a + 5 \quad \rightarrow \quad a$ plus 5
$\quad\quad\quad$ or $\quad a$ increased by 5

$2n \quad \rightarrow \quad$ the product of 2 and n
$\quad\quad\quad$ or $\quad$ 2 times n

Using Number Sense to Solve Equations

One way to solve some equations is to use mental math.

Solve $t + 9 = 13$.	Solve $y - 7 = 15$.
Ask yourself, what number added to 9 is 13?	Ask yourself, what number minus 7 is 15?
$4 + 9 = 13$ So $t = 4$.	$22 - 7 = 15$ So $y = 22$.
Solve $\frac{a}{3} = 9$	Solve $3y = 15$.
Ask yourself, what number divided by 3 equals 9?	Ask yourself, what number multiplied by 3 is 15?
$\frac{27}{9} = 3$	$3 \cdot 5 = 15$
So $a = 27$.	So $y = 5$.

4

Complete the following questions, showing all work on separate sheets of paper that you attach.

Record each answer on the provided answer sheet. The answer sheet is in the beginning of this packet.

Adding, subtracting, multiplying, and dividing decimals

Complete the following. <u>Show all work on a separate sheet of paper.</u>

1. $46.2 - 34.09$

2. $3.31 + 9.075$

3. $9.06 - 7.2$

4. $4.102 + 7.7$

5. $5.4 - 1.6$

6. $7.09 + 4.3 + 20.1$

7. 1.42×7.2

8. 2.2×4.1

9. 5.11×0.3

10. 3.68×5.8

11. 2.8×0.05

12. 1.45×0.7

13. $(2.07)(4.9)$

14. $5.1\overline{)351.9}$

15. $1.8\overline{)14.9}$

16. $0.32\overline{)3968}$

17. $18.6 \div 2.4$

18. $44.66 \div 11.2$

19. $48.15 \div 16.05$

Order of Operations

Simplify. <u>Show all work on a separate sheet of paper.</u>

20. $-3 + 2 \bullet 4$

21. $-5 \bullet (-4) + (-3) \bullet 2$

22. $(-7 \bullet 4) + 3 - 6$

23. $-10 + 7 \bullet 2$

24. $8 \bullet 6 + 4 \bullet 4$

25. $(6 \bullet 2) + (12 \div 3)$

Mixed Numbers and Improper Fractions

Write each mixed number as an improper fraction.

26. $3\dfrac{1}{4}$

27. $2\dfrac{2}{3}$

28. $1\dfrac{3}{8}$

Write each improper fraction as a mixed number in simplest form.

29. $\dfrac{14}{4}$

30. $\dfrac{12}{7}$

31. $\dfrac{22}{5}$

Fractions and Decimals

Write each fraction as a decimal. <u>Show all work on a separate piece of paper.</u>

32. $\dfrac{4}{5}$ **33.** $\dfrac{3}{4}$ **34.** $\dfrac{1}{6}$

Write each decimal as a mixed number or fraction in simplest form.
<u>Show all work on a separate piece of paper.</u>

35. 0.4   **36.** 0.07   **37.** 1.5

Order from least to greatest. <u>Show all work on a separate piece of paper.</u>

38. $\dfrac{1}{2}, \dfrac{4}{5}, \dfrac{1}{4}$ **39.** $\dfrac{2}{3}, \dfrac{3}{8}, \dfrac{1}{2}$ **40.** $\dfrac{5}{6}, \dfrac{7}{8}, \dfrac{1}{4}$

Percents, Fractions, and Decimals

Write each fraction as a percent. <u>Show all work on a separate piece of paper.</u>

41. $\dfrac{3}{4}$ **42.** $\dfrac{12}{25}$ **43.** $\dfrac{23}{4}$

Write each percent as a fraction in simplest form. <u>Show all work on a separate piece of paper.</u>

44. 45%   **45.** 60%   **46.** 16%

Applications of Percent

Find the total cost. <u>Show all work on a separate piece of paper.</u>

47. $10.00 with a 4% sales tax   **48.** $8.75 with a 5.25% sales tax

49. $61.00 with a 7% sales tax   **50.** $320.00 with a 6.5% sales tax

Algebraic Expressions

Evaluate each expression using the values $y = 4$, $z = 8$, and $p = 10$.
<u>Show all work on a separate piece of paper.</u>

51. $3y + 6$ **52.** $4z - 2$ **53.** $p + 2p$ **54.** $3z \times z$

Write a word phrase for each algebraic expression.

55. $9 + x$ **56.** $6x$ **57.** $x - 8$ **58.** $\dfrac{x}{5}$

Solve. <u>Show all work on a separate piece of paper.</u>

59. $4t = 24$

60. $p + 8 = 16$

61. $\dfrac{h}{3} = 7$

62. $\dfrac{g}{4} = 8$

63. $y - (-7) = 15$

64. $d - 6 = 14$

65. $d + 7 = 21$

66. $c - 21 = -4$

67. $a + 9 = -50$

68. $q - 43.94 = 400.12$

69. $3 + b = -6$

70. $91 + r = 100$

71. $\dfrac{x}{4} = -1$

72. $-5w = 125$

73. $-8k = -40$

74. $n - (-6) = 7$

75. $-13 = n + 9$