Student Name:_____

Math
5th to 6th Grade
Summer Packet

This summer packet is a requirement and due to your child's 6th grade math teacher on August 20th, 2021 for full credit. All assignments must be turned in by August 27th for half credit; anything after that will be given "No Credit." Don't wait until the last minute to complete it. Try your best and show your work. Make a great first impression and have this packet completed by August 20.

Thank-you,
6th Grade Math Teachers

Suggested Pacing

Week	Topic	Pages
Week 1 = June 7-11	Add, Subtract, Multiply and Divide Whole Numbers and Decimals	Pages 1-2 top of 3
Week 2 = June 14-18	Rounding and Comparing Decimals Prime, Composite, and Exponents	Pages 3-4
Week 3 = June 21-25	Greatest Common Factor and Least Common Multiple	Pages 5-6
Week 4 = June 28-July 2	Prime Factorization, Comparing and Ordering Fractions	Pages 7-8
Week 5 = July 5-9	Order of Operations and Geometry	Pages 9-10
Week 6 = July 12- 16	Simplify Fractions, Add Fractions and Mixed Numbers	Pages 11
Week 7 = July 19-23	Subtract and Multiply Fractions	Page 12

Summer Packet – 5th into 6th grade   Name _____

| **Addition** |
| Find the sum of the two numbers in each problem. |
| Show all work. |

Example:

$$\begin{array}{r} {}^{1}\;\;{}^{1}\;\; \\ 4\;\;4\;\;8 \\ +\;1\;\;8\;\;8 \\ \hline 6\;\;3\;\;6 \end{array}$$

1. 652
    + 345

2. 203
    + 525

3. 726
    + 268

Decimal Addition:

Remember to line up the decimals before adding. Bring the decimal straight down in your answer.

4. 7.75
    + 1.46

5. 51.4 + 2.86

6. .1274 + 8.25

| **Subtraction** |
| Find the difference between the two numbers in |
| each problem. Show all work. |

Example:

$$\begin{array}{r} 3\;\;13 \\ 7\;\;\cancel{4}\;\;\cancel{3} \\ 2\;\;1\;\;8 \\ -\;\;\;\;\;\;\;\; \\ \hline 5\;\;2\;\;5 \end{array}$$

7.
    407
    - 198

8.
    7,007
    -2,426

9.
    3,414
    -1,218

Decimal Subtraction:

Remember to line up the decimals before subtracting. Bring the decimal straight down in your answer.

10.
    338.38
    - 149.27

11.
    80.401 – 44.23

12.
    75.89 – 9.4

				Example:		
						5 4
						x 1 6
						3 2 4
						+ 5 4 0
						8 6 4

Multiplication
Find the product of the two numbers in each problem. Show all work.

13.

    65
x   4

14.

    42
x   8

15.

    84
x 39

Decimal Multiplication:
Multiply as you would with whole numbers. Count the decimal places in each factor. The product (answer) has the same number of decimal places.

16.

   .13
x   70

17.

    5.1
x   2

18.

   .108
x 2.5

Division
Find the quotient in each problem. If there is a remainder, state the remainders as R=____. Show all work. Feel free to use a separate sheet of paper.

19.

7)591

20.

12)264

21.

43)2815

Decimal Division:
If the divisor (outside number) is a decimal, you must move the decimal point (using multiplication) to the right until it becomes a whole number. Then, move the decimal in the dividend (inside number) the same number of times. Divide to find your answer (quotient). Then, move the decimal straight up from the dividend to the quotient. Remember, no remainders.

$$\overset{quotient}{divisor\overline{)dividend}}$$

22.

$$3\overline{)31.8}$$

23.

$$.5\overline{)7.45}$$

24.

$$.12\overline{)12.24}$$

Rounding
Underline the given place value. Look to the right. If this digit is 5 or greater, increase the underlined digit by 1. If the digit to the right is less than 5, keep the underlined digit the same.

Round to the nearest...

    hundredth

0.547   0.55

Round to the nearest....

25.   tenth
       0.3479

26. hundredth
     0.7553

27. whole number
    3.268

28. ten
     162.21

29.   thousandth
      0.0036

30.   hundred
      990.54

Compare using <, >, or =
1.2 ◯ 1.20   1.2 = 1.20

Compare the decimals.

31. 0.205 ◯ 0.21

32. 1.03 ◯ 0.03

33. 0.04 ◯ 0.050

34.   0.1 ◯ 0.1000

35. 0.52 ◯ 0.500

36. 0.41 ◯ 0.405

Prime Number: A whole number greater than 1 that has only two factors, 1 and itself.
Examples: 2, 3, 5, 7, 11, 13, 17, and 19 are all prime numbers.

Composite Number: A whole number greater than 1 that has more than two factors.
Example: 8 is a composite number since its factors are 1, 2, 4, 8.

Determine if the following numbers are prime or composite. If the numbers are composite, please list all of the factors.

37.   27: _____

38.   39: _____

39.   43: _____

40.   49: _____

Exponents
 A way to show repeated multiplication by the same factor is to use an exponent. In this example: $2^3 = 2 \times 2 \times 2 = 8$. The small raised three is the exponent. It tells how many times the number 2, called the base, is multiplied by itself.

Solve the following expressions by writing the expanded notation (repeated multiplication) and find the value.

41. 6^2 42. 2^6 43. 3^4

44.   eight squared   45.   five cubed

Greatest Common Factor
The greatest factor that two or more numbers
have in common (GCF).
1. List all the factors of **four** in order
2. List all the factors of **twenty** in order
3. List the common factors
4. Write the greatest common factor

Finding Common Factors:
4: **1, 2, 4**
20: **1, 2, 4, 5, 10, 20**
Common Factors: **1, 2, 4**   GCF= **4**

List all the factors for each number. Circle the common factors.

46.   18 : _____

30 : _____

Common Factors: _____   Greatest Common Factor: _____

47.   60 : _____

45 : _____

Common Factors: _____   Greatest Common Factor: _____

48.   23: _____

29: _____

Common Factors: _____   Greatest Common Factor: _____

49.   56: _____

72: _____

Common Factors: _____   Greatest Common Factor: _____

Least Common Multiple
The smallest nonzero multiple that two or more numbers have in common.

Finding Common Multiples:
4: 4, 8, 12, 16, 20, 24
6: 6, 12, 18, 24, 30, 36
Least Common Multiple= 12

1. List the multiples of each number until you reach a common multiple in the two numbers.
2. Write the least common multiple.

50. 8 : _____

    12 : _____

                            Least Common Multiple: _____

51. 7 : _____

    11 : _____

                            Least Common Multiple: _____

52. 25 : _____

    10 : _____

                            Least Common Multiple: _____

53. 24 : _____

    36: _____

                            Least Common Multiple: _____

Prime Factorization is a composite number renamed as a product of prime numbers. You may make a factor tree to find the answer. Put final answer in exponent form.

Find the prime factorization of 36.

```
        36
      /    \
    6   x   6
   / \     / \
  2 x 3   2 x 3      2² x 3²
```

54.

180

55.

525

56.

91

57.

48

Comparing Fractions
Compare each pair of numbers. Write the correct comparison symbol (<, >, =) in each circle. Make sure you have common denominators before comparing numerators.

Example:

$$\frac{1}{3} \bigcirc \frac{3}{4}$$

$$\downarrow \qquad \downarrow$$

$$\frac{4}{12} \qquad \frac{9}{12}$$

58.
$$\frac{3}{8} \bigcirc \frac{5}{8}$$

59.
$$\frac{3}{4} \bigcirc \frac{3}{8}$$

60.
$$\frac{1}{2} \bigcirc \frac{4}{8}$$

61.
$$\frac{3}{7} \bigcirc \frac{1}{4}$$

62.
$$\frac{3}{5} \bigcirc \frac{5}{6}$$

63.
$$\frac{7}{8} \bigcirc \frac{3}{4}$$

Ordering Fractions

Order the following fractions from **least to greatest**.

Write answers in ORIGINAL format.

64.

$$\frac{3}{8} \quad \frac{5}{8} \quad \frac{4}{8} \quad \frac{2}{8} \quad \frac{7}{8}$$

65.

$$\frac{1}{5} \quad \frac{4}{5} \quad \frac{1}{10} \quad \frac{6}{10} \quad \frac{7}{10}$$

66.

$$\frac{1}{2} \quad \frac{1}{4} \quad \frac{1}{6} \quad \frac{1}{3} \quad \frac{1}{5}$$

67.

$$\frac{1}{2} \quad \frac{5}{16} \quad \frac{30}{64} \quad \frac{3}{8} \quad \frac{9}{32}$$

Order of Operations
Solve the following problems. Show your work. Be sure to follow the order of operations.

Parenthesis
Exponents
Multiplication or Division: Which ever comes first from left to right.
Addition or Subtraction: Which ever comes first from left to right.

Example: $8 - 4 \div 2 + 2 =$
$8 - 2 + 2 =$
$6 + 2 =$
8

68. $15 \times 8 - 3 =$

69. $36 \div 4 \times 3 =$

70. $(30 + 8) \times 6 - 1 =$

71. $(30 + 8) \times (6-1) =$

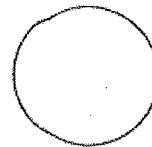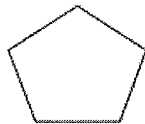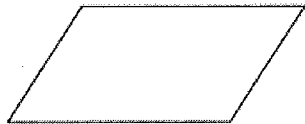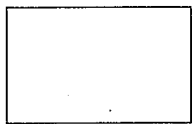72. $(29 - 18) + 14 \div 2 + 6 =$

73. $64 \div 8 \times 2$

74. $36 - 5 (16 - 11) =$

75. $25 + 18 \div 6 - 1 =$

76. $24 + 6^2 - 1^4 =$

Geometry-Who am I?
Use the following shapes to answer the
questions below.

77. I am a 2 dimensional shape that has four sides. I have four 90 degree angles. I have two sets of parallel lines. I also have two sides that are one length, and my other two sides are a different length.

Who am I?_____

78. I am a 2 dimensional shape that has three acute angles. All of my sides are the same length. I have no parallel sides.

Who am I? _____

79. I am a 2 dimensional shape that has four sides. I have two obtuse angles and two acute angles. I have two different sets of parallel sides. I also have two sides that are one length, and my other two sides are a different length.

Who am I? _____

80. I am a 2 dimensional shape that has 5 obtuse angles. I do not have any sides that are parallel.

Who am I? _____

81. I am a 2 dimensional shape that has four 90 degree angles. I have four sides that are all the same length. I have two different sets of parallel lines.

Who am I? _____

82. I am a 2 dimensional shape. My perimeter is also known as a circumference.

Who am I? _____

Simply Fractions
Simplify the following fractions. If the fractions are improper, change them to mixed numbers then simplify.

Example: $\dfrac{10 \div 5 =}{25 \div 5 =}$ $\dfrac{2}{5}$

83.

$$\frac{14}{28}$$

84.

$$\frac{15}{55}$$

85.

$$\frac{12}{51}$$

86.

$$\frac{34}{48}$$

87.

$$\frac{17}{4}$$

88.

$$\frac{80}{25}$$

Adding Fractions and Mixed Numbers
Add the following fractions. Make sure you have common denominators before adding. Remember, you only add the numerator (top number) and you keep the denominator (bottom number) the same! Simplify your final answers.

Example:

$$\frac{1}{3} + \frac{1}{5} =$$

$$\downarrow \qquad \downarrow$$

$$\frac{5}{15} + \frac{3}{15} = \frac{8}{15}$$

89.

$$\frac{6}{10} + \frac{3}{10} =$$

90.

$$2\frac{3}{8} + 1\frac{2}{8} =$$

91.

$$\frac{1}{9} + \frac{5}{6} =$$

92.

$$\frac{1}{12} + 1\frac{2}{3} =$$

Subtracting Fractions

Subtract the following fractions. Make sure you have common denominators before subtracting. Remember, you only subtract the numerator (top number) and you keep the denominator (bottom number) the same! Simplify your final answers.

Example:

$$\frac{5}{6} - \frac{1}{3} =$$

$$\downarrow \qquad \downarrow$$

$$\frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$$

93.

$$\frac{5}{6} - \frac{3}{6} =$$

94.

$$2\frac{8}{12} - 1\frac{3}{12} =$$

95.

$$\frac{7}{10} - \frac{2}{4} =$$

96.

$$3\frac{4}{5} - \frac{1}{4} =$$

Multiplying Fractions

Multiply the following fractions. Multiply the numerators; then multiply the denominators. Simplify, if necessary.

Example:

$$\frac{3}{5} \times \frac{5}{9} = \frac{15}{45} = \frac{1}{3}$$

97.

$$\frac{3}{4} \times \frac{1}{3} =$$

98.

$$\frac{2}{3} \times \frac{5}{8} =$$

99.

$$\frac{1}{3} \times \frac{2}{5} =$$

100.

$$\frac{7}{8} \times 2 =$$