

## Incoming 6th Grade Math Summer Packet

Packet due Date: 1st FULL day of school

This summer, I encourage you to continue to practice your math skills at home. Being actively involved in mathematical activities enhances learning.

In preparation for the 2023-2024 school year, I am providing you with a summer review packet. This packet focuses on some of the prerequisite concepts and skills necessary for your success in 6th grade mathematics.

While completing the review packet, I recommend that you:

- Complete each problem neatly and show your work.
- You may print this packet out and do your work on it OR you may do all of your work on notebook paper. (if you do this, please remember to number the problems as they are numbered in this packet.)
- Circle your final answers.
- Round to the nearest place value when directed to do so.
- Label answers when necessary.
- DO NOT USE A CALCULATOR.
- Do not rush! Use your time wisely.
- If you get stuck on a particular problem and can't figure it out, circle it and be prepared to ask me for help with it at the beginning of school.
- Yes, your parents can help you if needed.

I hope you have a wonderful and safe summer! I am looking forward to being your 6th grade Math teacher!

Sincerely,

Teresa Clayton  
6th Grade Math

**Addition**

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

Example:

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

1.  $\begin{array}{r} 652 \\ + 345 \\ \hline \end{array}$

2.  $\begin{array}{r} 203 \\ + 525 \\ \hline \end{array}$

3.  $\begin{array}{r} 726 \\ + 268 \\ \hline \end{array}$

**Decimal Addition:**

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

4.  $\begin{array}{r} 7.75 \\ + 1.46 \\ \hline \end{array}$

5.  $51.4 + 2.86$

6.  $.1274 + 8.25$

**Subtraction**

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

Example:

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

7.  $\begin{array}{r} 407 \\ - 198 \\ \hline \end{array}$

8.  $\begin{array}{r} 7,007 \\ - 2,426 \\ \hline \end{array}$

9.  $\begin{array}{r} 3,414 \\ - 1,218 \\ \hline \end{array}$

**Decimal Subtraction:**

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

10.  $\begin{array}{r} 338.38 \\ - 149.27 \\ \hline \end{array}$

11.  $80.401 - 44.23$

12.  $75.89 - 9.4$

**Multiplication**

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

Example:

$$\begin{array}{r} 54 \\ \times 16 \\ \hline 324 \\ + 540 \\ \hline 864 \end{array}$$

13.

$$\begin{array}{r} 65 \\ \times 4 \\ \hline \end{array}$$

14.

$$\begin{array}{r} 42 \\ \times 8 \\ \hline \end{array}$$

15.

$$\begin{array}{r} 84 \\ \times 39 \\ \hline \end{array}$$

**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.

$$\begin{array}{r} .13 \\ \times 70 \\ \hline \end{array}$$

17.

$$\begin{array}{r} 5.1 \\ \times 2 \\ \hline \end{array}$$

18.

$$\begin{array}{r} .108 \\ \times 2.5 \\ \hline \end{array}$$

**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.

$$7 \overline{)591}$$

20.

$$12 \overline{)264}$$

21.

$$43 \overline{)2815}$$

**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.

$$\begin{array}{r} \text{quotient} \\ \text{divisor} \overline{) \text{dividend}} \end{array}$$

22.

23.

24.

$$3 \overline{) 31.8}$$

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

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

**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 the decimals.

Compare using <, >, or =

1.2 ☐ 1.20    1.2 = 1.20

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.

1. List the first 6 multiples of 4
2. List the first 6 multiples of 6
3. List the common multiples
4. Write the least common multiple.

**Finding Common Multiples:**

4: 4, 8, 12, 16, 20, 24

6: 6, 12, 18, 24, 30, 36

Least Common Multiple= 12

50. 8 : \_\_\_\_\_

12 : \_\_\_\_\_

Common Multiples: \_\_\_\_\_ Least Common Multiple: \_\_\_\_\_

51. 7 : \_\_\_\_\_

11 : \_\_\_\_\_

Common Multiples: \_\_\_\_\_ Least Common Multiple: \_\_\_\_\_

52. 25 : \_\_\_\_\_

10 : \_\_\_\_\_

Common Multiples: \_\_\_\_\_ Least Common Multiple: \_\_\_\_\_

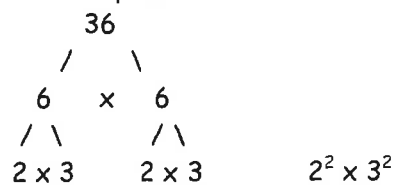
53. 24 : \_\_\_\_\_

36: \_\_\_\_\_

Common Multiples: \_\_\_\_\_ 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.



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:

$$\begin{array}{ccc} \frac{1}{3} & \bigcirc & \frac{3}{4} \\ \downarrow & & \downarrow \\ \frac{4}{12} & & \frac{9}{12} \end{array}$$

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.

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.  $64 \div 8 \times 2$

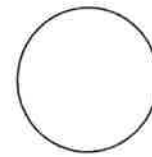
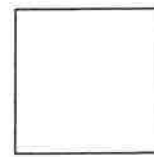
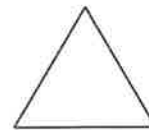
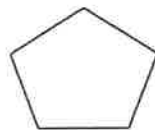
74.  $36 - 5(16 - 11) =$

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:  $\frac{10}{25} \div 5 = \frac{2}{5}$

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:

$$\begin{array}{r} \frac{1}{3} + \frac{1}{5} = \\ \downarrow \quad \downarrow \\ \frac{5}{15} + \frac{3}{15} = \frac{8}{15} \end{array}$$

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:

$$\begin{array}{r} \frac{5}{6} - \frac{1}{3} = \\ \downarrow \quad \downarrow \\ \frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2} \end{array}$$

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.

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