

Summer Math Packet
Incoming 6th Grade
Kids' Information Page



We're so proud of you for taking the time to work on math over the summer!

Here are some helpful hints for success:

- You have learned many different strategies – ***use the one that works best for you!***
- If you get stuck – we have given some examples on each page to help you!
- It's okay to ask parents and adults for help!
- The packet should be returned to your math teacher during the first week of school.
- Keep practicing your multiplication facts!

Enjoy your summer & we'll see you in September!



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

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:

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

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

$$0.547 \rightarrow 0.55$$

Round to the nearest....

25. tenth
0.3479

26. hundredth
0.7553

27. whole number
3.268

Compare the decimals.

Compare using $<$, $>$, or $=$

$$1.2 \bigcirc 1.20 \quad 1.2 = 1.20$$

28. 0.205 \bigcirc 0.21

29. 1.03 \bigcirc 0.03

30. 0.04 \bigcirc 0.050

31. 0.1 \bigcirc 0.1000

32. 0.52 \bigcirc 0.500

33. 0.41 \bigcirc 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.

34. 27: _____

35. 39: _____

36. 43: _____

37. 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.

38. 6^2

39. 2^6

40. 3^4

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.

41. 18 : _____

30 : _____

Common Factors: _____ Greatest Common Factor: _____

42. 60 : _____

45 : _____

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

43. 8 : _____

12 : _____

Common Multiples: _____ Least Common Multiple: _____

44. 7 : _____

11 : _____

Common Multiples: _____ Least Common Multiple: _____

Area and Volume

The number of square units needed to cover a region is the **area**. (square units)

The amount of space inside a solid figure is the **volume** of the figure. (cubic units)

Formulas

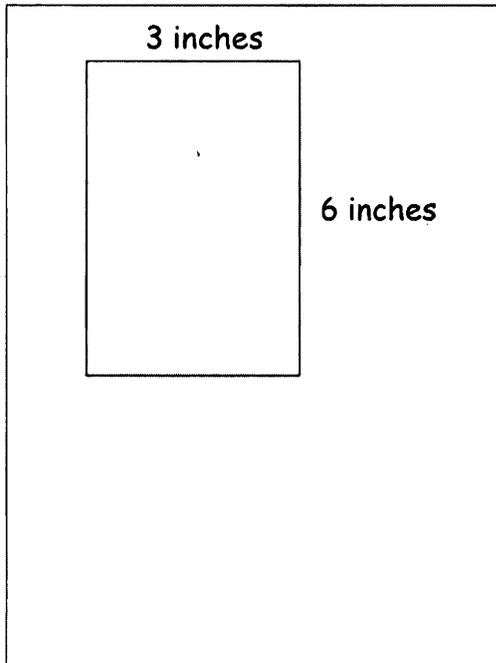
Area of a rectangle:

$$l \times w$$

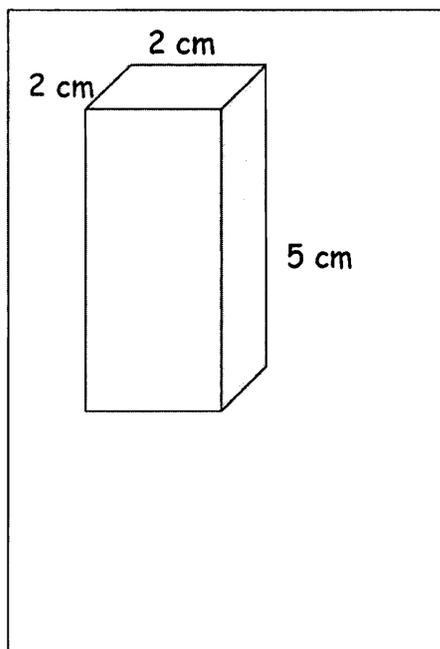
Volume of a rectangular prism:

$$l \times w \times h$$

- 45.** Find the area of the figure below.



- 46.** Find the volume of the figure below.



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:

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

47.

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

48.

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

49.

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

50.

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

51.

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

52.

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

Ordering Fractions

Order the following fractions from least to greatest.

53.

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

54.

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

55.

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

56.

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

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

$$8 - 2 + 2 =$$

$$6 + 2 =$$

$$8$$

57. $15 \times 8 - 3 =$

58. $36 \div 4 \times 3 =$

59. $(30 + 8) \times 6 - 1 =$

60. $(30 + 8) \times (6 - 1) =$

61. $(29 - 18) + 14 \div 2 + 6 =$

62. $64 \div 8 \times 2$

Simply Fractions

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

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

63.

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

64

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

65.

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

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:

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

66.

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

67.

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

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.

68.

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

Example:

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

69.

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

Multiplying Fractions

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

70.

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

71.

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

Example:

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

Summer Math Packet Reflection

Name _____

After completing your Summer Math Packet, please answer the following questions:

1) List the Math skills and concepts that you are **most confident** with. In other words, which problems were the **easiest** for you to solve? (example... order of operations)

2) List the Math skills and concepts that you found to be the most **difficult**. In other words, which problems were the **hardest** for you to solve? (example... dividing decimals)

3) What are your **expectations for Math class this year**? What do you expect to learn? What do you expect Math class to be like?

4) Write **two personal Math goals** to strive towards this school year.

For example...

This year in Math class, I hope to memorize my Math facts.

I also want to get better at solving word problems.
