

SUMMER MATH PACKET

Sixth Grade

Name: _____

Packet Due: September 11, 2009

Directions:

- Complete each problem.
- Show all work neatly in the actual packet.
(Additional lined paper may be added if necessary.)
- Box your final answers.
- Round to the nearest hundredths (unless the directions specify something different).
- Label answers when necessary.
- Do NOT use a calculator.
- A NJ ASK reference sheet has been provided to assist with some information.
NOTE: This has been included for the Seventh and Eighth Grade packets only. The reference sheet does not include information that would be helpful in solving the problems in the sixth grade packet.
- If you are stuck on a particular problem, use the answer key (odd-problems only) posted on the district website for a hint (www.medford.k12.nj.us). Or check out some of the math websites posted below. Parents or classmates may also be able to help. If you are still having difficulty, circle the problem number and be prepared to ask questions in class in September.
- This packet will be graded.

**HELPFUL WEBSITES:**

<http://www.aplusmath.com>
<http://amathsdictionaryforkids.com>
<http://funbrain.com>
<http://math.com>
<http://mathtv.com>

Not sure how to start? Look at the suggested pacing calendar on the back!

June 2009

Grade 5 into 6

Sun	Mon	Tue	Wed	Thu	Fri	Sat
21	22	23	24	25	26	27
28	# 1-3	# 4-5				

July 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 # 6-8	2 # 9-10	3 Independence Day Observed	4
5	# 11-12	# 13-14	# 15-17	# 18-20	# 21-23	11
12	# 24-26	# 27-28	# 29-31	# 32-33	# 34-36	18
19	# 37-38	# 39-41	# 42-43	# 44-46	# 47-48	25
26	# 49-51	# 52-54	# 55-56	# 57-60	# 61-64	

August 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	# 65-67	# 68-70	# 71-73	# 74-76	# 77-80	8
9	# 81-84	# 85-87	# 88-89	# 90-91	# 92-93	15
16	# 94-95	# 96-97	# 98-100	Reflection		22
23						29
30	31					

Subtraction

Find the difference between the two numbers in each problem. Feel free to use any method that you can use accurately and efficiently. Show all work.

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

Subtract

1.

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

2.

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

3.

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

4.

$$\begin{array}{r} 33,838 \\ - 14,927 \\ \hline \end{array}$$

5.

$$\begin{array}{r} 80,401 \\ - 42,306 \\ \hline \end{array}$$

Multiplication

Find the product of the two numbers in each problem. Feel free to use any method that you can use accurately and efficiently. Show all work.

$$\begin{array}{r} 5 \ 4 \\ \times 1 \ 6 \\ \hline 3 \ 2 \ 4 \\ + 5 \ 4 \ 0 \\ \hline 8 \ 6 \ 4 \end{array}$$

Multiply

6.

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

7.

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

8.

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

9.

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

10.

$$\begin{array}{r} 197 \\ \times 56 \\ \hline \end{array}$$

Division

Find the quotient in each problem. If there is a remainder, state the remainders as R= ____.

Feel free to use any method that you can use accurately and efficiently. Show all work.

Divide.

11.

$$7 \overline{)591}$$

12.

$$9 \overline{)199}$$

13.

$$7 \overline{)749}$$

14.

$$12 \overline{)264}$$

15.

$$36 \overline{)2628}$$

16.

$$43 \overline{)2815}$$

17.

$$64 \overline{)3571}$$

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. The underlined digit will be the last digit in the number.

Round to the nearest

hundredth

$$0.\underline{5}47 \rightarrow 0.55$$

Round to the nearest....

18.

tenth
0.3479

19.

hundredth
0.7553

20.

whole number
3.268

21.

ten
162.21

22.

thousandth
0.0036

23.

hundred
990.54

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.

24. 18: _____

30: _____

Common Factors: _____ Greatest Common Factor: _____

25. 60: _____

45: _____

Common Factors: _____ Greatest Common Factor: _____

26. 23: _____

29: _____

Common Factors: _____ Greatest Common Factor: _____

27. 56: _____

72: _____

Common Factors: _____ Greatest Common Factor: _____

28. 84: _____

105: _____

Common Factors: _____ Greatest Common Factor: _____

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.

29. 27: _____

30. 39: _____

31. 43: _____

32. 49: _____

33. 51: _____

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.

34. 6^2

35. 2^6

36. 3^4

37. eight squared

38. five cubed

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

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

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

39. 8: _____
12: _____
Common Multiples: _____ Least Common Multiple: _____

40. 7: _____
11: _____
Common Multiples: _____ Least Common Multiple: _____

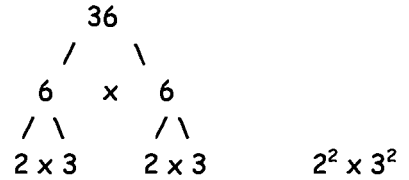
41. 25: _____
10: _____
Common Multiples: _____ Least Common Multiple: _____

42. 24: _____
36: _____
Common Multiples: _____ Least Common Multiple: _____

43. 42: _____
14: _____
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.



44.

180

45.

525

46.

48

47.

91

48.

51

Solve the following problems. Show your work.

Be sure to follow the order of operations:

Parentheses

Exponents

Multiplication or Division: which ever comes first, from left to right

Addition or Subtraction: which ever comes first, from left to right

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

$8 - 2 + 2 =$

$6 + 2 =$

8

49. $15 \times 8 - 3 =$

50. $10^2 - 3^3 =$

51. $36 \div 4 \times 3 =$

52. $(30 + 8) \times 6 - 1 =$

53. $(30 + 8) \times (6 - 1) =$

54. $30 + 8 \times 6 - 1 =$

55. $24 + 6^2 - 1^4 =$

56. $(24 + 6)^2 - 1^4 =$

Comparing Fractions

Compare the fractions. Find common denominators if needed. Insert < (less than), > (greater than), or = between fractions.

$$\frac{1}{2} \bigcirc \frac{1}{4} \qquad \frac{2}{4} > \frac{1}{4}$$

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

58. $\frac{4}{6} \bigcirc \frac{2}{6}$

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

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

61. $\frac{2}{3} \bigcirc \frac{3}{6}$

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

63. $\frac{7}{8} \bigcirc \frac{1}{2}$

64. $\frac{3}{9} \bigcirc \frac{2}{3}$

Ordering Fractions

Order from least to greatest. Find common denominators if needed.

$$\frac{3}{4} \quad \frac{6}{14} \quad \frac{5}{7} \qquad \frac{3}{4} = \frac{21}{28} \qquad \frac{6}{14} = \frac{12}{28} \qquad \frac{5}{7} = \frac{20}{28} \qquad \rightarrow \quad \frac{6}{14}, \frac{5}{7}, \frac{3}{4}$$

Order the fractions from *least* to *greatest*. Find common denominators if needed.

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

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

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

68. $\frac{1}{2} \quad \frac{3}{4} \quad \frac{1}{8} \quad \frac{2}{3} \quad \frac{5}{6}$

69. $\frac{2}{6} \quad \frac{2}{3} \quad \frac{2}{4} \quad \frac{2}{8} \quad \frac{2}{5}$

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

Comparing Decimals

Insert < (less than), > (greater than), or = between decimals.

Compare the decimals.

71. $0.205 \bigcirc 0.21$

72. $1.03 \bigcirc 0.03$

73. $0.04 \bigcirc 0.050$

74. $0.1 \bigcirc 0.1000$

75. $0.52 \bigcirc 0.500$

76. $0.41 \bigcirc 0.405$

Ordering Decimals

Hint: Rewrite the numbers so they have the same number of places after the zero. It may help to write them as a list with the decimal points lined up. Compare the units (whole numbers) and find the highest number. Compare the tenths and find the highest number. Continue this process for all the place values. If two numbers in the same place value are equal, look to the next number on the right as a tie breaker.

Example: 0.402, 0.42, 0.375, 1.2

0.402

0.420

0.375

1.200

Answer: 0.375, 0.402, 0.42, 1.2

Order the decimals from *least* to *greatest* and write the answer on the line.

77. 0.1, 0.02, 0.01, 0.2, 1.2 _____

78. 35.7, 35.007, 35.0007, 35.07 _____

79. 608.9, 680.9, 609.8, 690.8 _____

80. 0.000131, 0.00313, 0.00131, 0.000313 _____

81. 0.33, 0.12, 0.127, 0.2, 4.5 _____

82. 0.827, 1.23, 9.87, 0.987 _____

83. 0.418, 0.4, 0.040, 0.481 _____

84. 2.18, 21.8, 0.218, 218, 2.018 _____

Adding Fractions

Remember the denominators need to be the same when adding fractions.

Simplify the answers to lowest terms.

$$\frac{4}{7} + \frac{3}{7} = \frac{7}{7} = 1$$

$$\frac{2}{4} + \frac{3}{5} = ?$$

$$\frac{2}{4} = \frac{10}{20} \quad \frac{3}{5} = \frac{12}{20} \quad \frac{10}{20} + \frac{12}{20} = \frac{22}{20} = 1\frac{2}{20} = 1\frac{1}{10}$$

Add.

$$85. \frac{1}{8} + \frac{5}{8} =$$

$$86. \frac{3}{6} + \frac{2}{4} =$$

$$87. \frac{5}{12} + \frac{5}{6} =$$

$$88. \frac{3}{8} + \frac{5}{10} =$$

$$89. \frac{7}{8} + \frac{1}{2} =$$

$$90. \frac{4}{9} + \frac{1}{3} =$$

$$91. \frac{2}{3} + \frac{5}{8} =$$

Subtracting Fractions

Remember the denominators need to be the same when subtracting fractions.

Simplify the answers to lowest terms.

$$\frac{4}{7} - \frac{3}{7} = \frac{1}{7} \qquad \frac{3}{4} - \frac{3}{5} = ?$$

$$\frac{3}{4} = \frac{15}{20} \quad \frac{3}{5} = \frac{12}{20} \qquad \frac{15}{20} - \frac{12}{20} = \frac{3}{20}$$

Subtract.

92. $\frac{7}{8} - \frac{2}{8} =$

93. $\frac{4}{5} - \frac{1}{5} =$

94. $\frac{2}{4} - \frac{1}{2} =$

95. $\frac{3}{4} - \frac{2}{8} =$

96. $\frac{7}{9} - \frac{2}{3} =$

97. $\frac{5}{6} - \frac{1}{4} =$

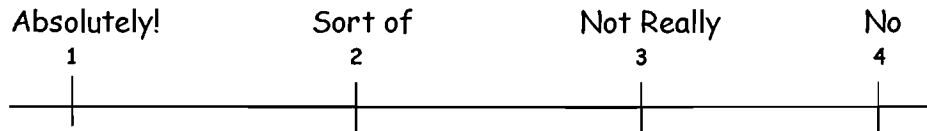
98. $\frac{4}{9} - \frac{2}{6} =$

99. $\frac{8}{12} - \frac{2}{3} =$

100. $\frac{5}{6} - \frac{2}{5} =$

Summer Packet Reflection:

Rate yourself on the scale from one to four for each of the following statements:



_____ 1. I followed the directions on the front of the packet.

_____ 2. I gave my best effort in completing the problems.

_____ 3. If I didn't understand a problem, I have a question ready to ask in class.

_____ 4. I was able to complete the packet independently.

_____ 5. I paced myself in completing the packet instead of cramming it all over the Labor Day weekend.

_____ 6. I think this packet helped me remember some of the things I've learned in math.

7. List two skills from the packet that you feel you have completely mastered.

8. List two skills in which you would like more practice.

9. Comments (optional):
