

**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.

$$\begin{array}{r} 407 \\ - 198 \\ \hline 209 \end{array}$$

2.

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

3.

$$\begin{array}{r} 3,414 \\ - 1,218 \\ \hline 2,196 \end{array}$$

4.

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

5.

$$\begin{array}{r} 80,401 \\ - 42,306 \\ \hline 38,095 \end{array}$$

**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.

$$\begin{array}{r} 42 \\ \times 8 \\ \hline 336 \end{array}$$

8.

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

9.

$$\begin{array}{r} 13 \\ \times 70 \\ \hline 910 \end{array}$$

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.

$$\begin{array}{r} 84 \text{ R}3 \\ 7 \overline{)591} \\ \underline{-56} \\ 31 \\ \underline{-28} \\ 3 \end{array}$$

12.

$$9 \overline{)199}$$

13.

$$\begin{array}{r} 107 \\ 7 \overline{)749} \\ \underline{-70} \\ 49 \\ \underline{-49} \\ 0 \end{array}$$

14.

$$12 \overline{)264}$$

15.

$$\begin{array}{r} 73 \\ 36 \overline{)2628} \\ \underline{-252} \\ 108 \\ \underline{-108} \\ 0 \end{array}$$

16.

$$43 \overline{)2815}$$

17.

$$\begin{array}{r} 55 \text{ R}51 \\ 64 \overline{)3571} \\ \underline{-320} \\ 371 \\ \underline{-320} \\ 51 \end{array}$$

**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

$$0.547 \rightarrow 0.55$$

Round to the nearest....

18.

tenth  
0.3479

19.

hundredth  
0.7553

$$\underline{0.76}$$

20.

whole number  
3.268

21.

ten  
162.21

$$\underline{160}$$

22.

thousandth  
0.0036

23.

hundred  
990.54

$$\underline{1,000}$$

**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: 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 6045: 1, 3, 5, 9, 15, 45Common Factors: 1, 3, 5, 15      Greatest Common Factor: 15

26. 23: \_\_\_\_\_

29: \_\_\_\_\_

Common Factors: \_\_\_\_\_      Greatest Common Factor: \_\_\_\_\_

27. 56: 1, 2, 4, 7, 8, 14, 28, 5672: 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72Common Factors: 1, 2, 4, 8      Greatest Common Factor: 8

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: Composite 1, 3, 9, 27

30. 39: \_\_\_\_\_

31. 43: prime

32. 49: \_\_\_\_\_

33. 51: Composite 1, 3, 17, 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.  $3^4$

$2 \times 2 \times 2 \times 2 \times 2 \times 2 = 64$

37. eight squared

38. five cubed

$8 \times 8 = 64$

**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: 8, 16, 24, 32, 40, 48, 56

12: 12, 24, 36, 48, 60

Common Multiples: 24, 48 Least Common Multiple: 24

40. 7: \_\_\_\_\_

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

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

41. 25: 25, 50, 75, 100

10: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Common Multiples: 50, 100 Least Common Multiple: 50

42. 24: \_\_\_\_\_

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

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

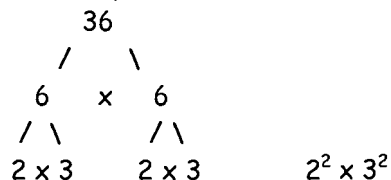
43. 42: 42, 84, 126, 168

14: 14, 28, 42, 56, 70, 84

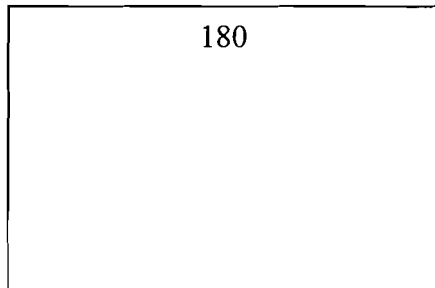
Common Multiples: 42, 84 Least Common Multiple: 42

**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.

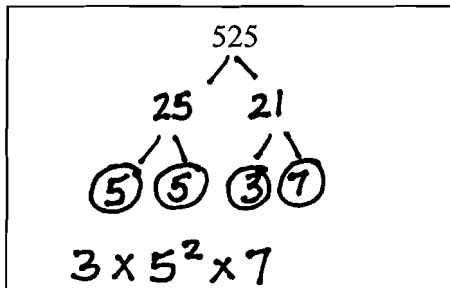
Find the prime factorization of 36.



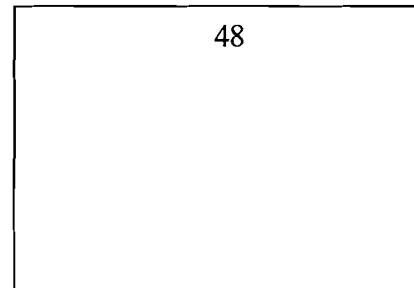
44.



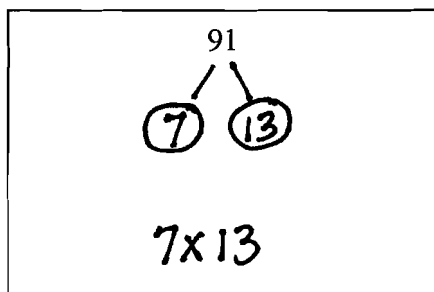
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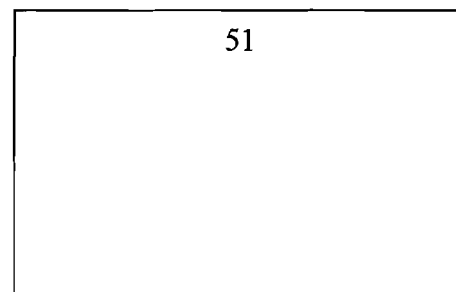
46.



47.



48.



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.  $15 \times 8 - 3 =$   
 $15 \times 8 - 3 =$   
 $120 - 3 =$   
 $117$

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

51.  $36 \div 4 \times 3 =$   
 $9 \times 3 =$   
 $27$

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

53.  $(30 + 8) \times (6 - 1) =$   
 $38 \times 5 =$   
 $190$

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

55.  $24 + 6^2 - 1^4 =$   
 $24 + 36 - 1 =$   
 $60 - 1 =$

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

### Comparing Fractions

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

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

$$57. \frac{3}{8} \textcircled{<} \frac{5}{8}$$

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

$$59. \frac{1}{3} \textcircled{<} \frac{4}{3}$$

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

$$61. \frac{2}{3} \textcircled{>} \frac{3}{6}$$

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

$$63. \frac{7}{8} \textcircled{>} \frac{1}{2}$$

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

$$\frac{4}{6} > \frac{3}{6}$$

$$\frac{7}{8} > \frac{4}{8}$$

### Ordering Fractions

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

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

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

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

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

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

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

$$\begin{array}{ccccc} \frac{1}{10} & \frac{1}{5} & \frac{6}{10} & \frac{7}{10} & \frac{4}{5} \\ & \downarrow & & & \downarrow \\ & \frac{2}{10} & & & \frac{8}{10} \end{array}$$

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

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

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

$$\frac{2}{8}, \frac{2}{6}, \frac{2}{5}, \frac{2}{4}, \frac{2}{3}$$

**Comparing Decimals**

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

Compare using <, >, or =

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

Compare the decimals.

$$71. \quad 0.205 \lt 0.21$$

$$72. \quad 1.03 \bigcirc 0.03$$

$$73. \quad 0.04 \lt 0.050$$

$$74. \quad 0.1 \bigcirc 0.1000$$

$$75. \quad 0.52 \gt 0.500$$

$$76. \quad 0.41 \bigcirc 0.405$$

**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.

$$77. \quad 0.1, 0.02, 0.01, 0.2, 1.2 \quad \underline{0.01, 0.02, 0.10, 0.20, 1.2}$$

$$78. \quad 35.7, 35.007, 35.0007, 35.07 \quad \underline{\hspace{10em}}$$

$$79. \quad 608.9, 680.9, 609.8, 690.8 \quad \underline{608.9, 609.8, 680.9, 690.8}$$

$$80. \quad 0.000131, 0.00313, 0.00131, 0.000313 \quad \underline{\hspace{10em}}$$

$$81. \quad 0.33, 0.12, 0.127, 0.2, 4.5 \quad \underline{0.12, 0.127, 0.2, 0.33, 4.5}$$

$$82. \quad 0.827, 1.23, 9.87, 0.987 \quad \underline{\hspace{10em}}$$

$$83. \quad 0.418, 0.4, 0.040, 0.481 \quad \underline{0.040, 0.4, 0.418, 0.481}$$

$$84. \quad 2.18, 21.8, 0.218, 218, 2.018 \quad \underline{\hspace{10em}}$$

**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.

$$85. \frac{1}{8} + \frac{5}{8} = \frac{6}{8} = \frac{3}{4}$$

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

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

$$\frac{5}{12} + \frac{10}{12} = \frac{15}{12} = 1\frac{3}{12} = 1\frac{1}{4}$$

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

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

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

$$\frac{7}{8} + \frac{4}{8} = \frac{11}{8} = 1\frac{3}{8}$$

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

$$\frac{16}{24} + \frac{15}{24} = \frac{31}{24} = 1\frac{7}{24}$$

**Subtracting Fractions**

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

Simplify the answers to lowest terms.

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

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

**Subtract.**

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

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

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

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

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

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

$$\frac{6}{8} - \frac{2}{8} = \frac{4}{8} = \frac{1}{2}$$

$$\frac{10}{12} - \frac{3}{12} = \frac{7}{12}$$

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

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

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

$$\frac{8}{12} - \frac{8}{12} = 0$$