FINDING THE GREATEST COMMON DIVISOR (KNOWN AS GCD or GCF)

Problems: Find GCD of 108 and 30

Method:
1. Subtract smaller number from the larger number.
2. Use remainder and subtract smaller number.
3. Continue until remainder is zero. Last number before zero is the GCF.

Solve:
1. 108 - 30 = 78
   78 - 30 = 48
   48 - 30 = 18
   30 - 18 = 12
   18 - 12 = 6
   6 - 6 = 0
2. Last number before zero is 6, the GCD.

6 Answer

TRY THESE:

1. Find the GCD of 40 and 12
2. Find the GCD of 20 and 48
3. Find the GCD of 25 and 90
4. Find the GCD of 30 and 72
5. Find the GCD of 14 and 30

FINDING THE LEAST COMMON MULTIPLE (LCM)

Problems: Find the LCM of 36 and 54

Method:
1. Mentally list the multiples of the larger number including the larger number itself.
2. Stop listing the multiples of the larger number when a multiple listed is also a multiple of the smaller number. This multiple is common to both and is the LCM.

Solve:
1. Multiples of 54: 54, 108....
2. Stop at 108 because 108 is also a multiple of 36. So the LCM is:

108 Answer

TRY THESE:

1. LCM of 20 and 30
2. LCM of 15 and 90
3. LCM of 18 and 30
4. LCM of 12 and 15
5. LCM of 16 and 40
6. LCM of 30 and 50
7. LCM of 12 and 40
8. LCM of 15 and 20

EXPONENTS

An exponent is the small number written to the upper right hand side of a number:

$$5^3$$

The '3' is called the exponent and the '5' is called the base. The exponent is often referred to as the 'power' of the number.

5^3 means 5 x 5 x 5

To work out the multiplication the result is 125. The exponent '3' is read: 3rd power or cubed. The example above could be read 'five cubed' or '5 to the third power'. The example:

5^2 means 5 x 5 or is 25

To read this example it is five squared or five to the second power.

Problems: $6^3 = ?$

Method:
1. Notice exponent.
2. Multiply number as a factor that many times.

Solve:
1. Exponent is 3.
2. 6 x 6 x 6 = 216 Answer

TRY THESE:

1. 8^2
2. 3^3
3. 3^2
4. 10^3
5. 7^2
6. 2^5
7. 9^2
8. 11^1

SQUARES; SQUARE ROOTS & CUBES; CUBE ROOTS

It will help your speed if these squares and cubes are known as well as you know the multiplication tables:

$1^2 = 1$	$9^2 = 81$	$17^2 = 289$	$1^3 = 1$
$2^2 = 4$	$10^2 = 100$	$18^2 = 324$	$2^3 = 8$
$3^2 = 9$	$11^2 = 121$	$19^2 = 361$	$3^3 = 27$
$4^2 = 16$	$12^2 = 144$	$20^2 = 400$	$4^3 = 64$
$5^2 = 25$	$13^2 = 169$	$21^2 = 441$	$5^3 = 125$
$6^2 = 36$	$14^2 = 196$	$22^2 = 484$	$6^3 = 216$
$7^2 = 49$	$15^2 = 225$	$23^2 = 529$	$7^3 = 343$
$8^2 = 64$	$16^2 = 256$	$24^2 = 576$	$8^3 = 512$
		$25^2 = 625$	$9^3 = 729$

Using the squares and cubes from above, the square roots or cube roots may be found indicated by a math symbol called the radical. $\sqrt{}$

Examples: $\sqrt{1} = 1$	$\sqrt{121} = 11$	$\sqrt{441} = 21$
$\sqrt{4} = 2$	$\sqrt{144} = 12$	$\sqrt{484} = 22$
$\sqrt{16} = 4$	$\sqrt{196} = 14$	$\sqrt{529} = 23$
$\sqrt{25} = 5$	$\sqrt{225} = 15$	$\sqrt{576} = 24$
$\sqrt[3]{27} = 3$	$\sqrt[3]{125} = 5$	$\sqrt[3]{2} = 6$

TRY THESE:

1. $\sqrt{64} =$	2. $\sqrt{400} =$	3. $\sqrt{225} =$
4. $\sqrt{361} =$	5. $\sqrt{256} =$	6. $\sqrt{289} =$
7. $\sqrt{196} =$	8. $\sqrt{900} =$	9. $\sqrt[3]{27} =$
10. $\sqrt[3]{8} =$	11. $\sqrt[3]{125} =$	12. $\sqrt[3]{64} =$

COMPARING TWO FRACTIONS

Problem: Which is larger? $\frac{5}{6}$ or $\frac{7}{9}$

Method:
1. Multiply first numerator times the second denominator.
2. Multiply first denominator times second numerator.
3. Compare results of #1, #2.

Solve:
1. $5 \times 9 = 45$
2. $6 \times 7 = 42$
3. $45 > 42$ so $\frac{5}{6} > \frac{7}{9}$

$\frac{5}{6}$ Answer

TRY THESE:

Use >, <, or =

1.	3/5	4/9	5.	3/11	9/33
2.	$^-$2/3	$^-$3/5	6.	$^-$4/5	$^-$1/3
3.	2/5	3/11	7.	3/13	2/11
4.	1/3	2/5	8.	5/17	3/17

COMPARING DECIMALS

Problem: **Which is larger: .65 or .63?**

Method:
1. Compare the value of the highest place.
2. If the highest places are equal in value, progress to the next lower place to compare. Continue until a digit in the same place is either higher or lower.

Solve:
1. Highest place is tenths: '6's are equal.
2. Proceed to compare at hundredths' places: 5 is greater than 3 so .65 is greater than .63.

.65 Answer

Note: Think of location of the number on the number line, too.

TRY THESE:

1. .605 or .6057
2. .3 or .314
3. $.\overline{33}$ or .33
4. 5.2 or 5.002
5. 6.3 or $^{-}6.3$
6. $^{-}3.2$ or $^{-}3.3$
7. $^{-}.35$ or $^{-}.354$
8. .241 or .24006
9. .55 or .5
10. .102 or .0899