

GCF

When Comparing 2 or More Numbers....

GCF - Greatest Common Factor

Is the largest COMMON number that will divide into each

- you can list the factors or use prime factorization trees

Prime Factorization

Ex) GCF (6,12) =

12

6

12 =

Using Prime factorization (tree)

Underline the common primes (then multiply them and that give you the GCF)

LCM

When Comparing 2 or More Numbers....

LCM - Lowest Common Multiple

Is the largest COMMON multiple

- you can list the multiples of each number and circle the common multiple that fall in all list Prime Factorization

or

use prime factorization trees

- use maximum # of primes in each list

WATCH The video for description

<https://www.khanacademy.org/math/algebra2/rational-expressions-equations-and-functions/adding-and-subtracting-rational-expressions/v/least-common-multiple-exercise>

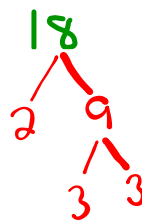


Ex) GCF (18,12) = ?

$$= 2 \times 3$$

$$= 6$$

Prime Factorization



Prime factorization

$$18 = 2 \times 3 \times 3$$

$$= 2 \times 3^2$$

$$12 = 2 \times 2 \times 3$$

$$= 2^2 \times 3$$

highest power of primes

highest

Both have

so take largest power of each

LCM(18,12)

$$= 2^2 \times 3^2$$

$$= 4 \times 9$$

$$= 36$$

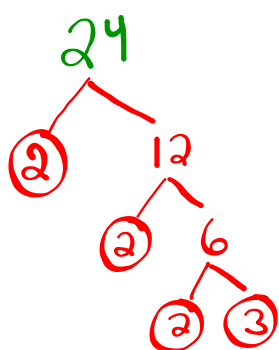
Worksheet

1)) Find the

- a) GCF (24, 40) b) GCF (84, 60) c) GCF (36, 90, 126)

1)) Find the

- a) LCM (15,40) b) LCM (12,15) c) LCM (9, 14, 63)



Prime factorization

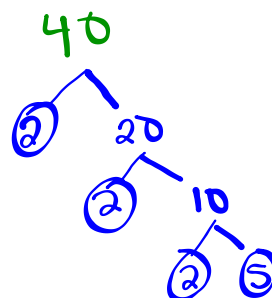
$$24 = \underline{2} \times \underline{2} \times \underline{2} \times 3$$

$$= 2^3 \times 3$$

$$GCF(24, 40) = \underline{2} \times \underline{2} \times \underline{2}$$

$$= 8$$

↓
use the
primes that
are common



$$40 = \underline{2} \times \underline{2} \times \underline{2} \times 5$$

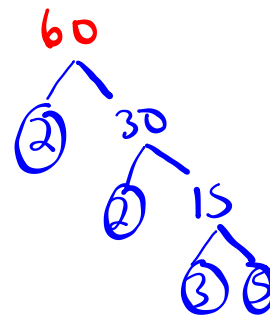
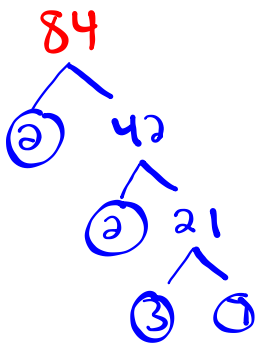
$$= 2^3 \times 5$$

$$LCM(24, 40) = 2^3 \times 3^1 \times 5^1$$

$$= 8 \times 3 \times 5$$

$$= 120$$

↓
Write down
all prime # involved
and the go with highest
power of each prime #



Prime factorization

$$84 = \underline{2} \times \underline{2} \times \underline{3} \times 7$$

$$2^2 \times 3 \times 7$$

$$GCF(84, 60) = 2 \times 2 \times 3$$

$$= 12$$

$$60 = \underline{2} \times \underline{2} \times \underline{3} \times 5$$

$$2^2 \times 3 \times 5$$

$$LCM(84, 60) = \overset{2}{2} \times \overset{1}{3} \times \overset{1}{5} \times \overset{1}{7}$$

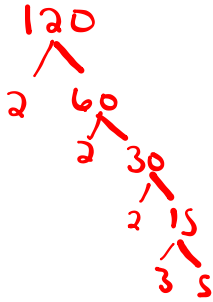
$$= 420$$

Warm Up

2, 3, 5, 7, 11, 13, 17, 19,

LCM

Find the GCF (120, 960, 1400)



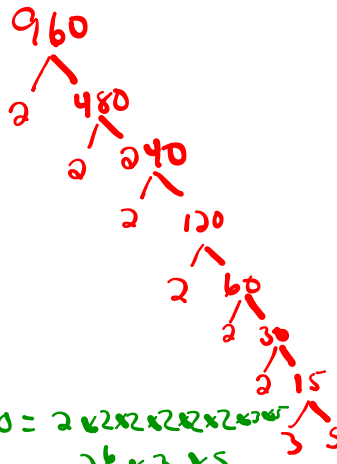
$$120 = 2 \times 2 \times 2 \times 3 \times 5$$

$$2^3 \times 3 \times 5$$

$$\text{GCF}(120, 960, 1400) = 2^3 \times 5$$

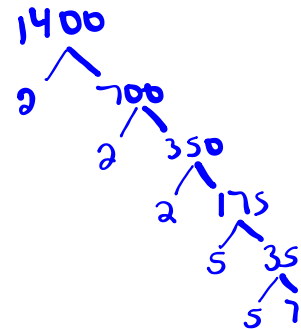
$$= 8 \times 5$$

$$= 40$$



$$960 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5$$

$$2^6 \times 3 \times 5$$



$$1400 = 2 \times 2 \times 2 \times 5 \times 5 \times 7$$

$$2^3 \times 5^2 \times 7$$

$$\text{LCM}(120, 960, 1400) = 2^6 \times 3^1 \times 5^2 \times 7^1$$

$$= 64 \times 3 \times 25 \times 7$$

$$= 33600$$

Find the LCM (15, 20, 24, 27)