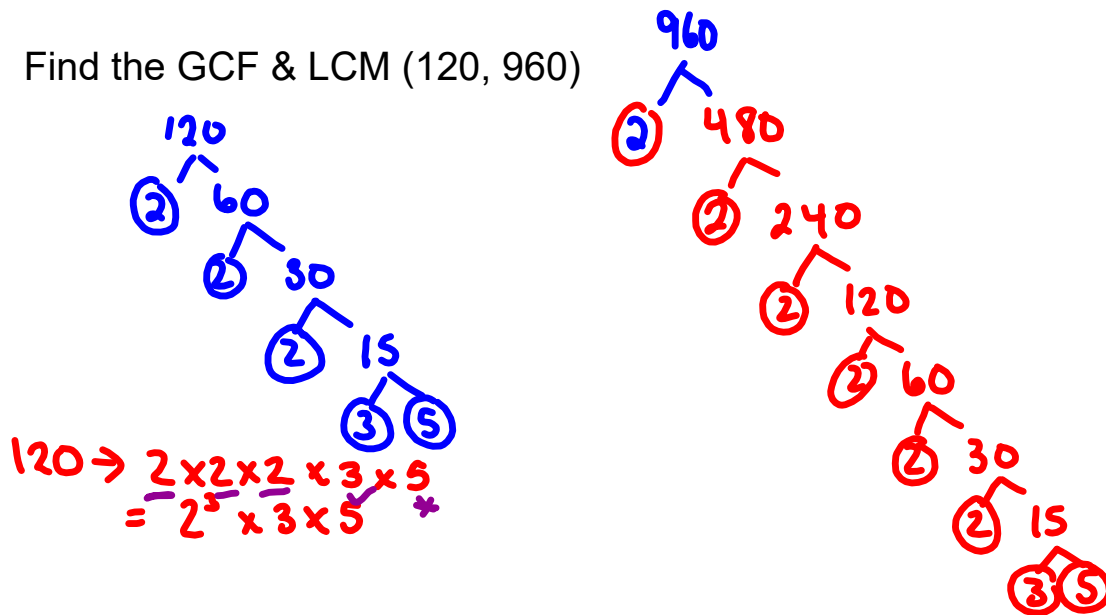


Warm Up

Find the GCF & LCM (120, 960)



$$120 \rightarrow 2 \times 2 \times 2 \times 3 \times 5$$

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

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

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

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

$$= 120$$

$$\text{LCM}(120, 960)$$

$$= 2^6 \times 3^1 \times 5^1$$

$$= 64 \times 3 \times 5$$

$$= 960$$

Find the GCF & LCM (15, 20)



$$15 = 3 \times 5$$

$$20 = 2 \times 2 \times 5$$

$$\text{GCF}(15, 20) = 5$$

$$\text{LCM}(15, 20) = 2^2 \times 3^1 \times 5^1$$

$$= 4 \times 3 \times 5$$

$$= 60$$

Video On GCF & LCM

 <https://www.youtube.com/watch?v=NFHEH2rzSJo>

$$\begin{array}{r} 18 \\ 24 \\ \hline \text{GCF} \\ \hline 18 \end{array} \quad \underline{24}$$

LCM
18 →
24 →

GCF =

Box/Ladder Method

2	18	24
3	9	12
	3	4

$$\text{GCF} = 2 \times 3 = 6$$

24, 36

Found it

$$\text{LCM}(18, 24) = 2 \times 3 \times 3 \times 4 = .$$

Homework

Exercises page 140

A

~~3~~ ^{a, b, c} 4 5 ^{a, b, c}

4abc
5abc
6abc
8ab
10ace
13

B

^{a, c, e} 6 ~~7~~ ⁸ ~~9~~ ^{a, c, e} 10 ~~11~~ ~~12~~ ¹³ ^{GCF}
~~14~~ ~~15~~ ~~16~~ ~~17~~ ~~18~~ ~~20~~

C

21 22

Notice Anything?



They all have something in
common!



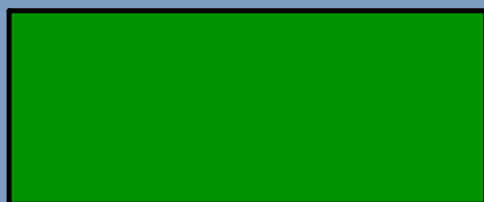
What do these 3 items have in common?



Eggs,

Eyes,

**A Load of
Laundry**



What do these 3 items have in common?



A Locksmith

A Piano

Florida,



What do these 3 items have in common?



Frosty the
snowman



Wicked
witches of
the west



Ice Cream



What do these 3 items have in common?



A Light



Blue Jeans



Memories



What do these 3 items have in common?

Hard

Salt

Distilled

Common Factoring



for the Greatest Common Factor
GCF

Review of GCF

Find the GCF for the following pairs of numbers:

1) 6 and 12

2) 6 and 21

3) 30 and 21

4) 144 and 126

144 :

126 :



for the Greatest Common Factor GCF

Find the **GCF** of 36 and 54.

The factors of 36 are **1, 2, 3, 4, 6, 9, 12, 18**, and 36.

The factors of 54 are **1, 2, 3, 6, 9, 18**, 27, and 54.

The **common factors** of 36 and 54 are **1, 2, 3, 6, 9, 18**

Although the numbers in **bold** are all common factors of both 36 and 54, **18** is the **greatest common factor**.

What is a Common Factor?

We said that

The Factors of 132 are : ①, ②, ③, 4, ⑥, 11, 12, 22, 33, 44, 66, 132

The Factors of 162 are : ①, ②, ③, ⑥, 9, 18, 27, 54, 81, 162

The common factors are the ones found in both lists.

**Therefore: The common factors of 132 & 162 are
1, 2, 3, 6**

The screenshot shows a Windows Internet Explorer browser window. The address bar contains the URL: http://jmh.nbed.nb.ca/sites/jmh.nbed.nb.ca/files/noteattach/teacher/211/3-1_factors_and_multipl. The page title is "what is the Greatest Common Factor?". The main content of the page includes the following text:

what is the Greatest Common Factor?

The Greatest Common Factor is simply the greatest of the common factors.

The common factors of 132 & 162 are: **1, 2, 3, 6**

The Greatest Common Factor of 132 & 162 is 6.

The page number "11" is visible in the bottom right corner of the document area. The browser interface includes a Favorites sidebar on the left with a list of bookmarks for pages 7 through 16, dated from August to September. The Windows taskbar at the bottom shows the system tray with the time "2:56 PM" and date "10/2/2011".

What is the Greatest Common Factor?

The Greatest Common Factor is simply
the greatest of the common factors.

The common factors of 132 & 162 are: **1, 2, 3, 6**

The Greatest Common Factor of 132 & 162 is 6.

What is the Least Common Multiple?

The least common multiple is the least multiple that is the same for two or more numbers.

The Least Common Multiple

Determine the least common multiple of 18, 20, and 30

Step #1 Write the prime factorization of each number.

Step #2 Circle the greatest power of each prime number.

http://jmh.nbed.nb.ca/sites/jmh.nbed.nb.ca/files/noteattach/teacher/211/3.1_factors_and_multipl - Windows Internet Explorer

http://jmh.nbed.nb.ca/sites/jmh.nbed.nb.ca/files/noteattach/teacher/211/3.1_factors_and_multiples_of_whole_numbers.pdf

James M Hill High School

http://jmh.nbed.nb.ca/sites/jmh.nbed.nb.ca/files...

14 / 20 42.1%

Comment Share

Bookmarks

- 29-9:10 PM
- Page 7: Aug 29-9:10 PM
- Page 8: Aug 29-9:10 PM
- Page 9: Aug 30-12:06 AM
- Page 10: Aug 29-10:35 PM
- Page 11: Aug 29-10:54 PM
- Page 12: Sep 5-10:08 PM
- Page 13: Sep 5-10:12 PM
- Page 14: Sep 5-10:23 PM
- Page 15: Sep 5-10:26 PM
- Page 16: Sep 5-10:45 PM

Step #1 Write the prime factorization of each number.

18 =

20 =

30 =

14

Done Unknown Zone | Protected Mode: Off 2:58 PM 10/2/2011

Step #1 Write the prime factorization of each number.

$$18 =$$

$$20 =$$

$$30 =$$

Step #2 Circle the greatest power of each prime number.

$$18 = 2 \cdot 3 \cdot 3 = 2 \cdot 3^2$$

$$20 = 2 \cdot 2 \cdot 5 = 2^2 \cdot 5$$

$$30 = 2 \cdot 3 \cdot 5$$

Solution: $2^2 \cdot 3^2 \cdot 5 = 4 \cdot 9 \cdot 5$
 $= 180$

Determine the least common multiple of 120 & 309

Determine the least common multiple of 70, 90 & 140

Solving Problems that Involve Greatest Common Factor and Least Common Multiple

- a) What is the side length of the smallest square that could be tiled with rectangles that measure 16 cm by 40 cm? Assume the rectangles cannot be cut. Sketch the square and rectangles.

- b) What is the side length of the largest square that could be used to tile a rectangle that measures 16 cm by 40 cm? Assume that the squares cannot be cut. Sketch the rectangle and squares.