

Algebra II

4-4

Prime Factorization

Nov 1-8:44 AM

Factor (n)- a number in a multiplication

$$4 \times 7 = 28$$

Factors

product

Prime number- a number with two factors, one and itself.

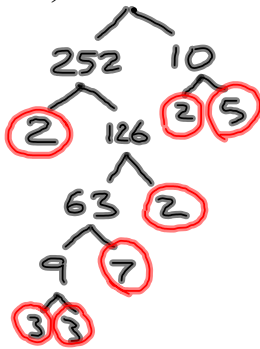
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 43, 47

1- not prime because it has only one factor.
It is called the identity.

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Prime Factorization- Make a tree

*) $2520 = 2^3 \cdot 3^2 \cdot 5 \cdot 7$



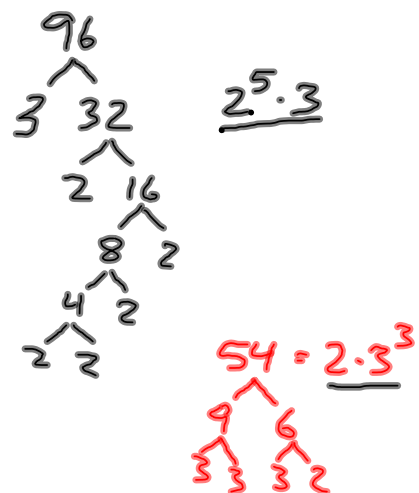
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Find the GCF and LCM

*) 96, 54

GCF: $2 \cdot 3 = 6$

LCM: $2^5 \cdot 3^3 = 864$



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Find the GCF and LCM of the factored numbers.

$$2^2 \cdot 3^5 \cdot 5 \cdot 7^2 \cdot 13 \cdot 17^2$$

$$2^3 \cdot 3^4 \cdot 7 \cdot 11 \cdot 17$$

GCF: _____

LCM: _____

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*) $98x^3yz ; 70x^2y^3z$

$$\begin{array}{c} 98x^3yz \\ \wedge \\ 2 \quad 49 \\ \wedge \\ 7 \quad 7 \end{array} \quad 2 \cdot 7^2 x^3 y z$$

GCF: $2 \cdot 7 x^2 y z = 14x^2 y z$

LCM: $2 \cdot 5 \cdot 7^2 x^3 y^3 z$
 $490x^3 y^3 z$

$$\begin{array}{c} 70x^2y^3z \\ \wedge \\ 7 \quad 10 \\ \wedge \\ 2 \quad 5 \end{array} \quad 2 \cdot 5 \cdot 7 x^2 y^3 z$$

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1-26

all

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