

Chapter 2-2 Prime Numbers and Prime Factorization

SWBAT: Find factors of a number and find the prime factorization of a number.

Vocabulary:

Multiple: is the product of that number and any non zero number

Least Common Multiple (LCM): of Two or more numbers is the least.

Multiples of 6 : 6, 12, 18, 24, 30, ...

Multiples of 9: 9, 18, 27, 36, ...

The LCM of 6 and 9 is 18.

Find the LCM of each pair.

a. 4, 10

b. 5, 7

c. 12, 15

A **Factor** is a whole number that divides a nonzero whole number with remainder of zero.

What are the factors of:

$$6 =$$

$$20 =$$

$$35 =$$

A **Composite Number** is a whole number greater than 1 with more than two factors.

ie. 25 is composite since it has three factors 1, 5, 25.

Name two other composite numbers and list their factors?

If a number is not composite then it's:

prime number has exactly two factors; 1 and "itself".

Prime Factorization: takes a composite number as product of its prime numbers.

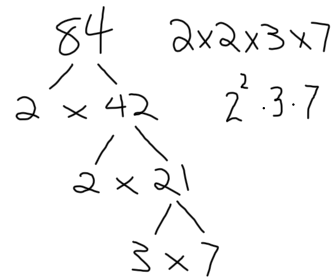
Division Ladder

$$\begin{array}{r} 2 \overline{)84} \\ 2 \overline{)42} \\ 3 \overline{)21} \\ \quad 7 \end{array}$$

$$84 = 2 \times 2 \times 3 \times 7$$

PR. Fact.  $2^2 \times 3 \times 7$

Factor Tree



$$\begin{array}{r} 104 \\ \swarrow \quad \searrow \\ 2 \times 52 \quad = 104 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ 2 \times 2 \times 26 \quad = 104 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ \underline{2} \times \underline{2} \times \underline{2} \times \underline{13} = 104 \end{array}$$

ANSWER  
Prime