

Least Common Multiple

- Multiples of a number are products of that number and the numbers 1, 2, 3, 4...

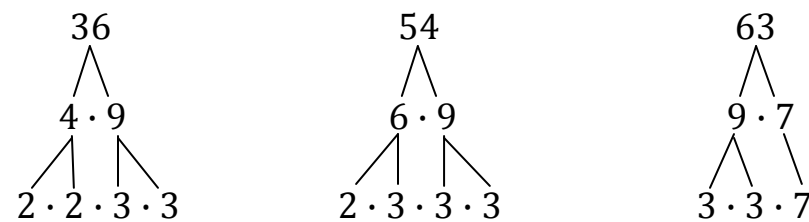
Example:

Multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, 36...

Multiples of 6: 6, 12, 18, 24, 30, 36, 42...

- Common Multiples of these sets include 12, 24, & 36.
- The Least Common Multiple (LCM) is the smallest of these: 12
- Listing multiples of each number (as above) is one method of finding the LCM.
- A second method uses prime factorizations of each number using a Factor Tree.
- To find the LCM of two or more numbers, find the prime factorization of each number.
- Use each different factor the most times it occurs in any one prime factorization.
- Multiply to find the LCM.

Example: Find the LCM of 36, 54, and 63.



The LCM will use two factors of two, three factors of 3, and one factor of 7.

$$2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 7 = 756$$

- The LCM must always be greater than or equal to the largest number given.

Example: Find the LCM of 25 and 50.



The LCM will use two factors of 5 and one factor of 2.

$$2 \cdot 5 \cdot 5 = 50$$