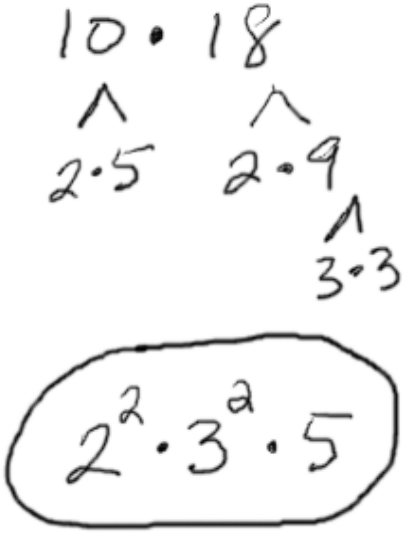
Objective: To find the GCF and LCM of integers and monomials.

The **Least Common Multiple** of two or more integers or monomials is the least positive integer or monomial that has each of the integers or monomials as factors.

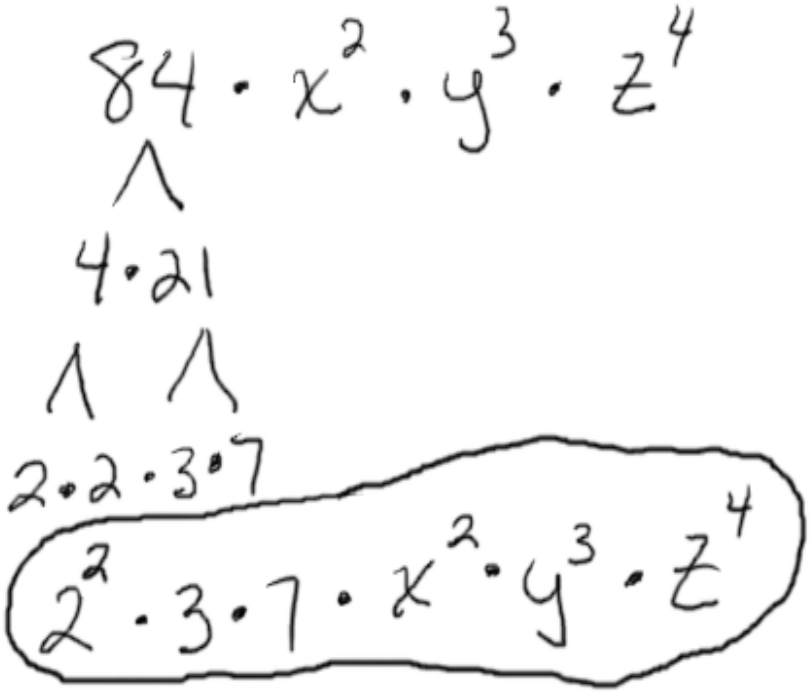
Strategy:

1) Factor each integer or monomial into its prime factorization (where each factor is a product of prime numbers).
2) Take the greatest power of each prime factor (for variables take the variables with the largest exponent).

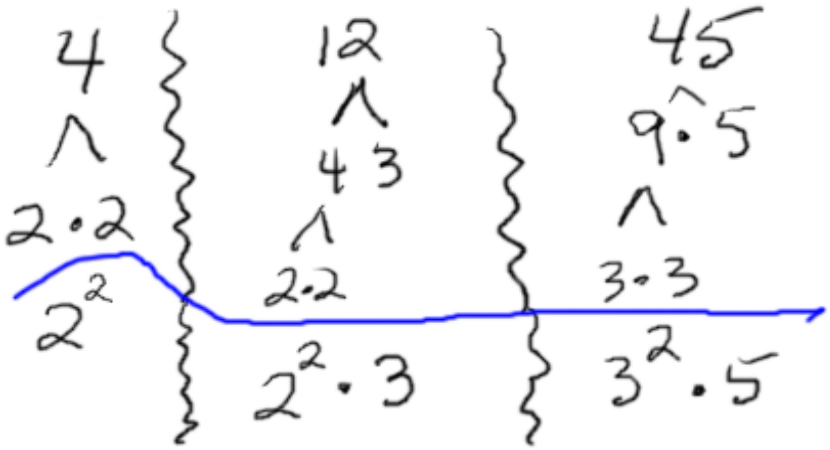
Ex 1) Find the prime factorization of 180.



Ex 2) Find the prime factorization of: $84x^2y^3z^4$



Ex 3) Find the LCM of 4, 12, and 45.



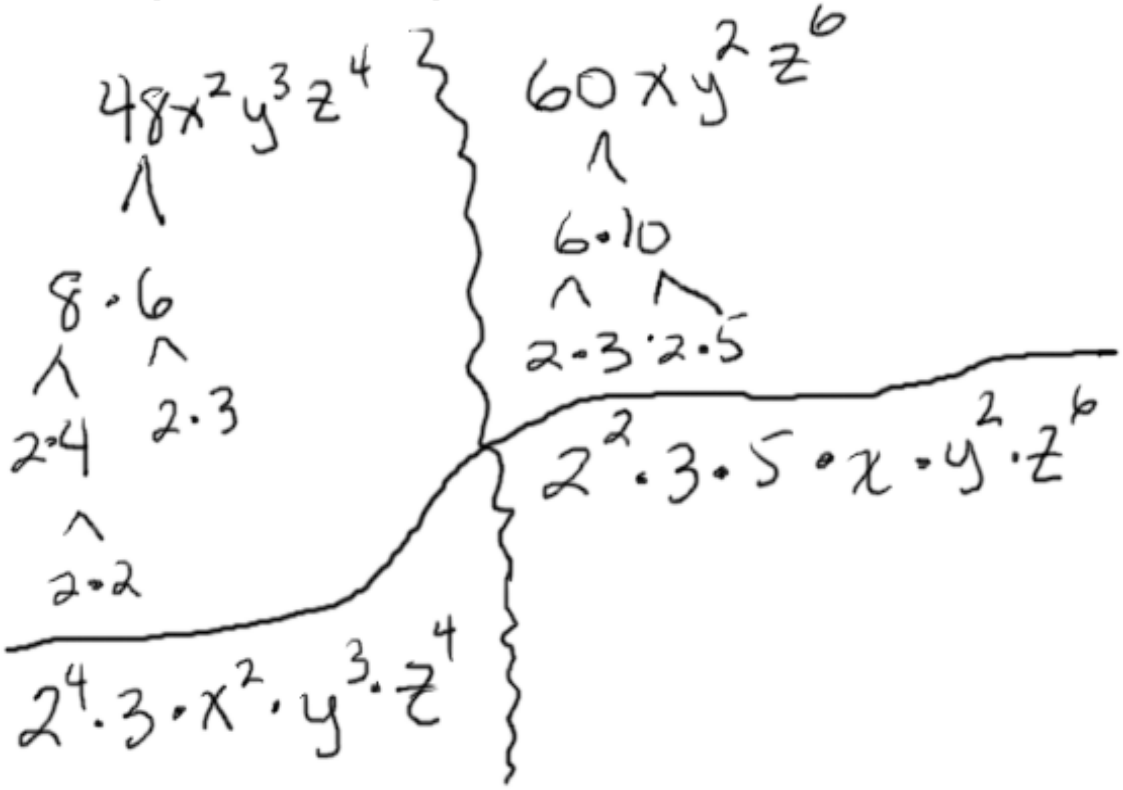
LCM: $2^2 \cdot 3^2 \cdot 5$

$4 \cdot 9 \cdot 5$

180

Ex 4) Find the LCM of:

$48x^2y^3z^4$ and $60xy^2z^6$



LCM: $2^4 \cdot 3 \cdot 5 \cdot x^2 \cdot y^3 \cdot z^6$

$16 \cdot 3 \cdot 5 \cdot x^2y^3z^6$

$240x^2y^3z^6$