

## Greatest Common Factor in Venn Diagrams

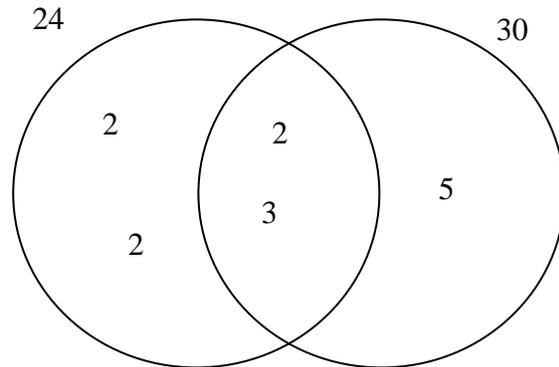
**Example:** Find the greatest common factor of 24 and 30,  $GCF(24,30)$

Prime factorizations:

$$24 = 2^3 \times 3$$

$$30 = 2 \times 3 \times 5$$

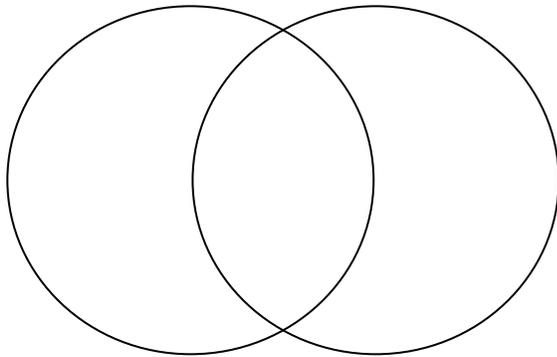
The prime factorizations of 24 and 30 have two numbers in common; one 2 and one 3. These go in the intersection of the two circles on the Venn diagram. The “other” factors are placed as shown on the right. **The greatest common factor will be the product of the numbers in the intersection.**



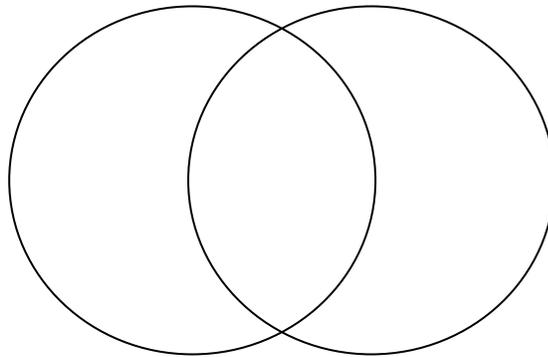
By looking at the Venn Diagram, we can see that the  $GCF(24,30) = 2 \times 3 = 6$ .

**Practice Problems:** find the prime factorization of each number. Then place the prime factors in the appropriate part of the Venn diagram and find the GCF of the numbers.

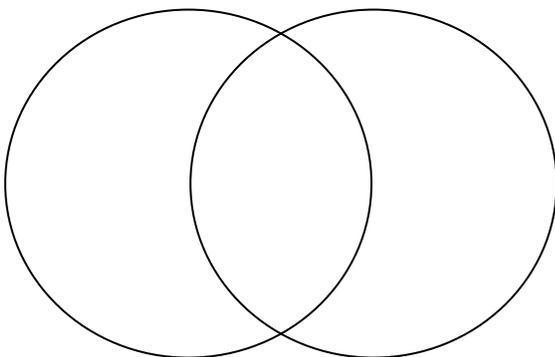
$GCF(72, 54) =$



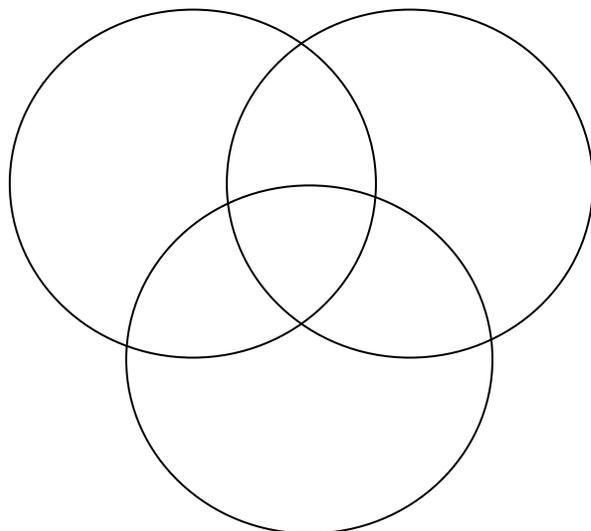
$GCF(84, 56) =$



$GCF(21,10) =$



$GCF(18,45,60) =$



## Least Common Multiple in Venn Diagrams

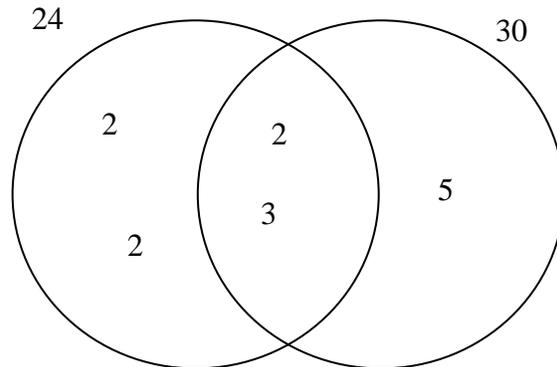
**Example:** Find the least common multiple of 24 and 30,  $LCM(24,30)$

Prime factorizations:

$$24 = 2^3 \times 3$$

$$30 = 2 \times 3 \times 5$$

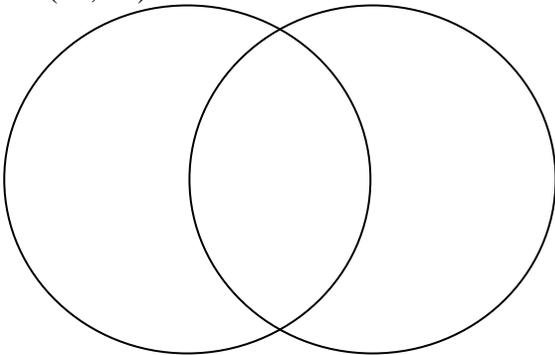
The prime factorizations of 24 and 30 have two numbers in common; one 2 and one 3. These go in the intersection of the two circles on the Venn diagram. The “other” factors are placed as shown on the right. **The least common multiple will be the product of the numbers in the Venn diagram.**



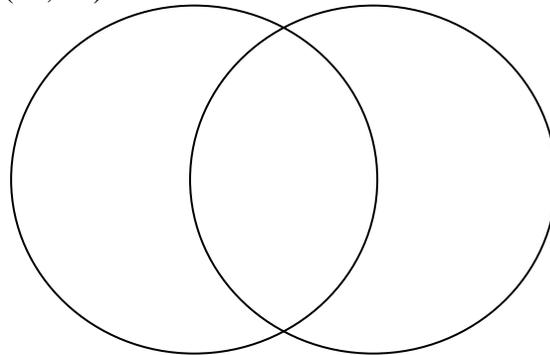
By looking at the Venn Diagram, we can see that the  $LCM(24,30) = 2 \times 2 \times 2 \times 3 \times 5 = 120$ .

**Practice Problems:** find the prime factorization of each number. Then place the prime factors in the appropriate part of the Venn diagram and find the LCM of the numbers.

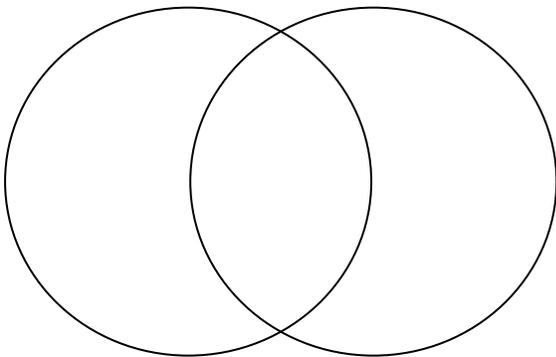
$$LCM(72, 54) =$$



$$LCM(27, 36) =$$



$$LCM(9,16) =$$



$$LCM(24,90,100) =$$

