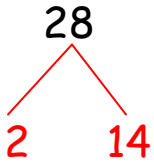


Prime Factorization Factor Trees

These are the steps you need to follow to find the prime factorization of a number. Keep repeating Steps 1 and 2 until all you have left are prime numbers.

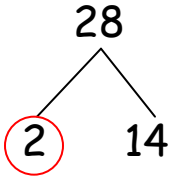
Find the prime factorization of 28.

Step 1



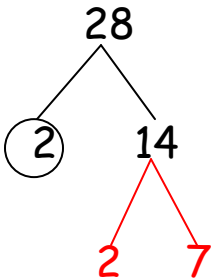
What are two factors that equal 28?
- write them as part of the tree

Step 2



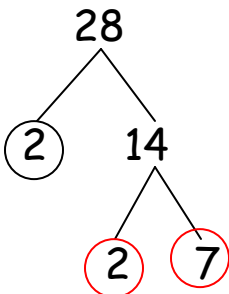
Circle any numbers that are prime.

Step 3



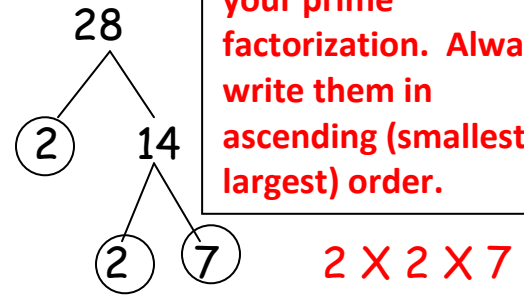
Factor any remaining composite numbers, repeating Steps 1 and 2.

Step 4



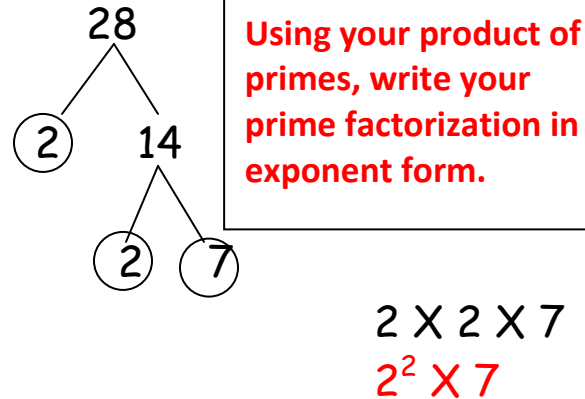
Circle any prime numbers.

Step 5



When you have all prime numbers, you are finished factoring. Now use the circled, prime numbers to write your prime factorization. Always write them in ascending (smallest to largest) order.

Step 6



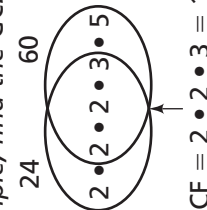
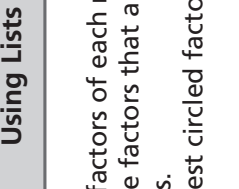
Using your product of primes, write your prime factorization in exponent form.

Answer

$$28 = 2^2 \times 7$$

LCM & GCF Summary Chart

GCF and LCM Notes GCF = Greatest Common Factor LCM = Least Common Multiple

	Using Lists	Prime Factorization	Venn Diagram and Prime Factorization
GCF	<ol style="list-style-type: none"> List the factors of each number. Circle the factors that are on both lists. The largest circled factor is the GCF. <p>For example, find the GCF of 24 and 60.</p> <p>24: 1, 2, 3, 4, 6, 8, 12, 24 60: 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60</p> <p>GCF = 12</p>	<ol style="list-style-type: none"> Prime factorize both numbers. The GCF is the product of all the numbers that are in common in the prime factorization. <p>For example, find the GCF of 24 and 60.</p> $24 = 2 \cdot 2 \cdot 2 \cdot 3$ $60 = 2 \cdot 2 \cdot 3 \cdot 5$ <p>GCF = $2 \cdot 2 \cdot 3 = 12$</p>	<ol style="list-style-type: none"> Prime factorize both numbers. Fill in the Venn Diagram with pieces of the prime factorizations. The GCF is the product of all of the numbers common in the prime factorization. <p>For example, find the GCF of 24 and 60.</p>  <p>GCF = $2 \cdot 2 \cdot 3 = 12$</p>
LCM	<ol style="list-style-type: none"> List the multiples of each number. Circle the factors that are on both lists. The smallest circled multiple is the LCM. <p>For example, find the LCM of 24 and 60.</p> <p>24: 24, 48, 72, 96, 120, 144, 168...</p> <p>60: 60, 120, 180, 240...</p> <p>LCM = 120</p>	<ol style="list-style-type: none"> Prime factorize both numbers. The LCM is the product of one set of what is common multiplied by all of the "leftovers." <p>For example, find the LCM of 24 and 60.</p> $24 = 2 \cdot 2 \cdot 2 \cdot 3$ $60 = 2 \cdot 2 \cdot 3 \cdot 5$ $\text{LCM} = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 5 = 120$	<ol style="list-style-type: none"> Prime factorize both numbers. Fill in the Venn Diagram with pieces of the prime factorizations. The LCM is the product of everything in the Venn Diagram. <p>For example, find the LCM of 24 and 60.</p>  <p>LCM = $2 \cdot 2 \cdot 2 \cdot 3 \cdot 5 = 120$</p>