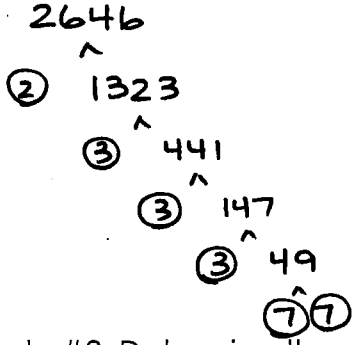
KEY

Lesson 3.1 ~ Prime Factorization

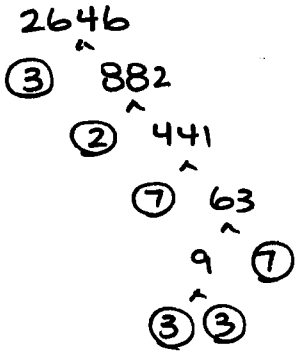
- Prime Factorization: writing a number as the product of its prime factors
- Greatest Common Factor: largest number a set of numbers can be divided by
- Lowest Common Multiple: smallest number that is a multiple of a set of numbers

Example #1: Determine the prime factors of 2646.

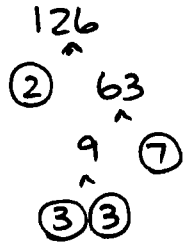


$2646 = 2 \cdot 3^3 \cdot 7^2$

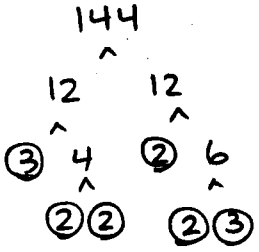
OR



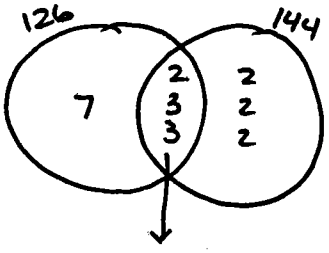
Example #2: Determine the greatest common factor of 126 and 144.



$126 = 2 \cdot 3^2 \cdot 7$



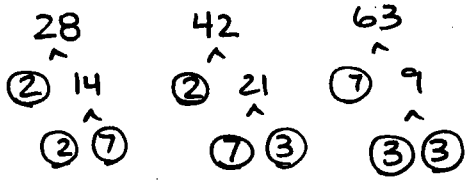
$144 = 2^4 \cdot 3^2$

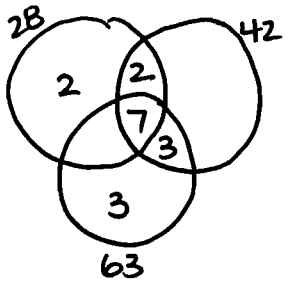


GCF = $2 \times 3 \times 3 =$ **18**

(LCM = $7 \times 2 \times 3 \times 3 \times 2 \times 2 \times 2 = 1008$)

Example #3: Determine the least common multiple of 28, 42, and 63.





LCM = $2 \times 2 \times 7 \times 3 \times 3 =$ **252**

(GCF = 7)

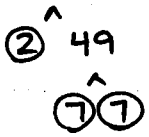
Name : _____

Prime Factor Tree

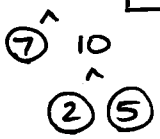
MS2

Draw a prime factor tree for each number.

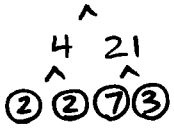
1) 98 = 2×7^2



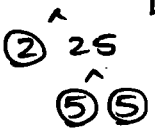
2) 70 = $2 \times 7 \times 5$



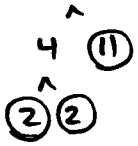
3) 84 = $2^2 \times 3 \times 7$



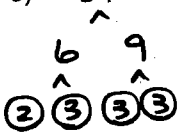
4) 50 = 2×5^2



5) 44 = $2^2 \times 11$



6) 54 = 2×3^3



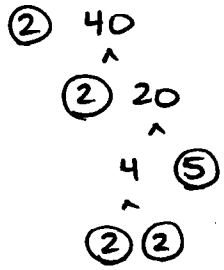
Name : _____

Prime Factor Tree

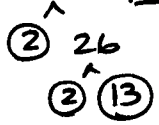
MS3

Draw a prime factor tree for each number.

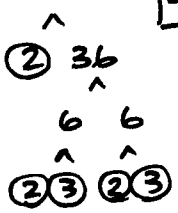
1) 80 = $2^4 \times 5$



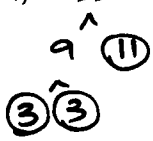
2) 52 = $2^2 \times 13$



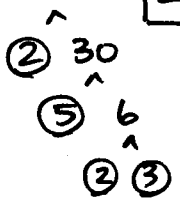
3) 72 = $2^3 \times 3^2$



4) 99 = $3^2 \times 11$



5) 60 = $2^2 \times 3 \times 5$



6) 36 = $2^2 \times 3^2$