

NRF 10 – Section 3.1 – Accomodated Notes and Worksheet

Definitions

Multiple – A number that can be divided by a number without a remainder

Example: 42 is a multiple of 6 because $42 \div 6$ is 7 (no remainder)

Factor – **Factors** are numbers you can multiply together to get another number

Example: both 6 and 7 are factors of 42 because 6×7 is 42

Prime number – a number with only two factors, 1 and itself

Examples: 2,3,5,7,11,13,17,

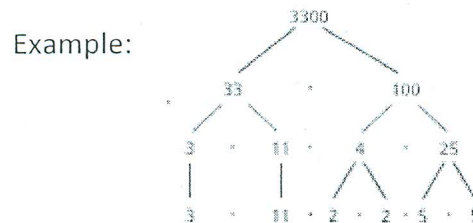
Composite number – a number with more than two factors

Examples: 4,6,8,9,10,12,14,15 note: - all even numbers except for 2 are composite

- The number 1 is neither prime nor composite

Prime Factorization – every composite number can be represented as a product of its prime factors. Examples: $42 = 2 \times 3 \times 7$ and $24 = 2 \times 2 \times 2 \times 3$ and $200 = 2 \times 2 \times 2 \times 5 \times 5$

Factor Trees are often used to find the prime factorization of numbers



The prime factorization of 3300 is $2 \times 2 \times 3 \times 5 \times 5 \times 11$ or $2^2 \times 3 \times 5^2 \times 11$

Least Common Multiple (LCM)- The least common multiple of two numbers is the smallest number(not zero) that is a multiple of both

Example: The LCM of 6 and 8 is 24. The multiples of 6 include 6,12,18,24, ... and the multiples of 8 include 8,16,24,.... The common multiple of 24 is the Least Common Multiple of both lists.

Greatest Common Factor (GCF) – The greatest common factor of two numbers is the largest number that divides both numbers.

Example: The GCF of 24 and 32 is 8 because the factors of 24 are 1,2,3,4,6,8,12,24 and the factors of 32 are 1,2,4,8,16,32. The largest factor that is common to both lists is 8

Divisibility Rules – there are some patterns/rules that allow you to determine if a number is divisible by another number. The most commonly used divisibility rules are represented in the following chart:

Divisibility Rules Chart

A number is divisible by...	Divisible	Not Divisible
2 if the last digit is even (0, 2, 4, 6, or 8).	3,978	4,975
3 if the sum of the digits is divisible by 3.	315	139
4 if the last two digits form a number divisible by 4.	8,512	7,518
5 if the last digit is 0 or 5.	14,975	10,978
6 if the number is divisible by both 2 and 3	48	20
9 if the sum of the digits is divisible by 9.	711	93
10 if the last digit is 0.	15,990	10,536