



FACTORS

Factors are numbers that are multiplied to make another number. For example, when you multiply 6×7 , you get 42, so 6 and 7 are both factors of 42.

Factors of a number are often visualized as factor pairs. A number can have more than one factor pair, like 24.

$$1 \cdot 24 = 24$$

$$2 \cdot 12 = 24$$

$$3 \cdot 8 = 24$$

$$4 \cdot 6 = 24$$

1, 2, 3, 4, 6, 8, 12, and 24 are all factors of 24.

Some numbers are prime numbers because their only factors are 1 and themselves. Other numbers, like 24, are called composite numbers because they have other factors as well.

Prime Numbers

2, 3, 5, 7, 11, 13...

Composite Numbers

4, 6, 8, 9, 10, 12...

Composite numbers are made up of prime numbers multiplied together. We can see all the prime factors by creating a prime factorization, which is unique

24 $4 \cdot 6$ $(2 \cdot 2) \cdot (2 \cdot 3)$	or	24 $(3) \cdot 8$ $(2) \cdot 4$ $(2) \cdot (2)$
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No matter how you slice it, the prime factorization of 24 is $2 \cdot 2 \cdot 2 \cdot 3$.

Some numbers share factors, called common factors. To determine the common factors between two numbers, we just need to look at the factors for each number and determine which are the same. The Greatest Common Factor (GCF) will be the largest of the common factors.

Factors of 24:

1, 2, 3, 4, 6, 12, 24

Factors of 60:

1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

24 and 60 have common factors 2, 3, 4, 6, and 12 (1 is common to every number, so there's no need to list it)