

1.4 | VOCABULARY

Prime Factorization

Name _____

Date _____

Factor A whole number that is multiplied by another whole number to make a product. Example: 3 is a factor of 18 because $3 \times 6 = 18$.

Divisor A number that divides another number. When the remainder is 0, the divisor is also a factor. Example: In $18 \div 3 = 6$, the divisor is 3.

Factor pair Two whole-number factors whose product is a given number. Example: 3 and 6 are a factor pair of 18.

Product The result of multiplication. Example: In $3 \times 6 = 18$, the product is 18.

Multiple The product of a number and a whole number. Example: 6, 12, 18, and 24 are multiples of 6.

Divisible / divisibility A number is divisible by another number when division leaves a remainder of 0. Example: 18 is divisible by 3.

Divisibility test A shortcut for deciding whether a number is divisible by another number without long division. Example: A number is divisible by 3 when its digit sum is divisible by 3.

Prime number A whole number greater than 1 with exactly two positive factors: 1 and itself. Example: 13 is prime; its factors are 1 and 13.

Composite number A whole number greater than 1 with more than two positive factors. Example: 12 is composite because 2 and 3 are factors.

Factorization An expression that writes a number as a product of factors. Example: One factorization of 36 is 4×9 .

Prime factor A factor that is also a prime number. Example: The prime factors of 12 are 2 and 3.

Prime factorization A factorization in which every factor is prime. Example: $36 = 2^2 \times 3^2$.

Factor tree A branching diagram used to break a composite number into smaller factors until every branch ends in a prime. Example: A tree for 12 can begin with 2×6 .

Exponent A small raised number that tells how many times the base is used as a factor. Example: $2^3 = 2 \times 2 \times 2$.

Remember The number 1 is neither prime nor composite. Different factor trees may begin with different factor pairs, but they must end with the same prime factorization. Stop branching only when every number at the end is prime.