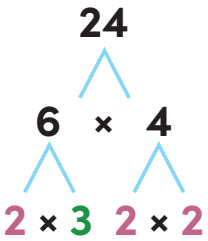
Name _____ Date ANSWER KEY

Prime Factorization

Factors are numbers that you multiply together to get another number. When a factor is a prime number, it is called a **prime factor**. You can write the **prime factorization** of a number by writing the number as a product of its prime factors. Let's try it with 24.



Start by writing 24 as the product of any two of its factors.

Look at the factors. If they are not prime, continue breaking them down until you have all prime factors.

$24 = 2 \times 2 \times 2 \times 3$
$= 2^3 \times 3$

Once you have all prime factors, write the prime factorization. Make sure to write the prime factors in order from least to greatest, and include exponents if you can.

Find all the prime factors of each number. Then write the prime factorization. If possible, rewrite the prime factorization using exponents.

50 50 = $2 \times 5 \times 5 = 2 \times 5^2$	56 56 = $2 \times 2 \times 2 \times 7 = 2^3 \times 7$
42 42 = $2 \times 3 \times 7$	27 27 = $3 \times 3 \times 3 = 3^3$
48 48 = $2 \times 2 \times 2 \times 2 \times 3 = 2^4 \times 3$	70 70 = $2 \times 5 \times 7$