

Lesson 4-1

Example 1 Identify Numbers as Prime or Composite

Determine whether 32 is *prime* or *composite*.

The number 32 has six factors: 1, 2, 4, 8, 16, and 32. So, it is composite.

Example 2 Identify Numbers as Prime or Composite

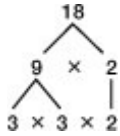
Determine whether 19 is *prime* or *composite*.

The number 19 has only two factors, 1 and 19, so it is prime.

Example 3 Find the Prime Factorization

Find the prime factorization of 18.

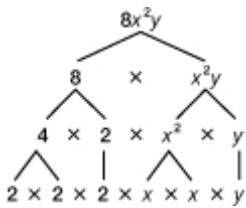
Use a factor tree.



The prime factorization of 18 is $3 \times 3 \times 2$ or 2×3^2 .

Example 4 Factor an Algebraic Expression

ALGEBRA Factor $8x^2y$.



$$8x^2y = 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot y$$