NAME _____ DATE _____ PERIOD _____

4-8 Study Guide and Intervention

Least Common Multiple

A **multiple** of a number is the product of that number and any whole number. The least nonzero multiple of two or more numbers is the **least common multiple (LCM)** of the numbers.

Example 1 **Find the LCM of 15 and 20 by listing multiples.**

List the multiples.

multiples of 15: 15, 30, 45, **60**, 75, 90, 105, **120**, ...

multiples of 20: 20, 40, **60**, 80, 100, **120**, 140, ...

Notice that 60, 120, ..., are common multiples. So, the LCM of 15 and 20 is 60.

Example 2 **Find the LCM of 8 and 12 using prime factors.**

Write the prime factorization.

$8 = 2 \times 2 \times 2 = 2^3$

$12 = 2 \times 2 \times 3 = 2^2 \times 3$

The prime factors of 8 and 12 are 2 and 3.
Multiply the greatest power of both 2 and 3.

The LCM of 8 and 12 is $2^3 \times 3$, or 24.

Exercises

Find the LCM of each set of numbers.

1. 4, 6 **12**
2. 6, 9 **18**
3. 5, 9 **45**
4. 8, 10 **40**
5. 12, 15 **60**
6. 15, 21 **105**
7. 4, 15 **60**
8. 8, 20 **40**
9. 8, 16 **16**
10. 6, 14 **42**
11. 12, 20 **60**
12. 9, 12 **36**
13. 14, 21 **42**
14. 6, 15 **30**
15. 4, 6, 8 **24**
16. 3, 5, 6 **30**