



Name _____ Date _____

Least Common Multiple (pages 206–209)

A **multiple** of a number is the product of that number and any whole number. Two different numbers can share some of the same multiples. These are called **common multiples**. The least of the common multiples of two or more numbers, other than zero, is called the **least common multiple (LCM)**. Use the following method to find the LCM.

Finding the LCM	Use prime factorization. <ul style="list-style-type: none"> • Write the prime factorization for each number. • Identify all common prime factors. Then find the product of the common prime factors using each common factor only once, and multiply by any remaining prime factors. This product is the LCM.
------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

EXAMPLES

A Is 28 a multiple of 4?

$$\begin{array}{ll}
 4 \times 0 = 0 & 4 \times 4 = 16 \\
 4 \times 1 = 4 & 4 \times 5 = 20 \\
 4 \times 2 = 8 & 4 \times 6 = 24 \\
 4 \times 3 = 12 & 4 \times 7 = 28
 \end{array}$$

Yes, 28 is a multiple of 4.

B Find the LCM of 10 and 12.

Use prime factorization.

$$\begin{array}{l}
 10 = \boxed{2} \times 5 \\
 12 = \boxed{2} \times 2 \times 3 \\
 \text{The LCM is } 2 \times 2 \times 3 \times 5, \text{ or } 60.
 \end{array}$$

Try These Together

1. Is 26 a multiple of 6?

HINT: Is 26 a product of 6 and any whole number?

2. Find the LCM of 8 and 10.

HINT: Use prime factorization. Use common prime factors only once.

PRACTICE

Determine whether the first number is a multiple of the second number.

- | | | |
|-----------|-----------|-------------|
| 3. 52; 13 | 4. 64; 8 | 5. 24; 4 |
| 6. 64; 7 | 7. 53; 6 | 8. 98; 14 |
| 9. 32; 9 | 10. 48; 3 | 11. 132; 11 |

Find the LCM for each set of numbers.

- | | | | |
|------------|--------------|---------------|----------------|
| 12. 7, 14 | 13. 3, 5 | 14. 4, 9 | 15. 4, 22 |
| 16. 20, 45 | 17. 2, 9, 15 | 18. 3, 15, 45 | 19. 10, 30, 65 |

20. Design Ingrid is stringing 3 bracelets, one with 4 mm beads, one with 5 mm beads, and one with 6 mm beads. What is the shortest length where all the bracelets are equal?



21. Standardized Test Practice Find the LCM of 5, 6, and 45.

- A** 45 **B** 60 **C** 90 **D** 135

Answers: 1. no 2. 40 3. yes 4. yes 5. yes 6. no 7. no 8. yes 9. no 10. yes 11. yes 12. 14 13. 15 14. 36 15. 44 16. 180 17. 90 18. 45 19. 390 20. 60 mm 21. C