

# Least Common Multiple (pages 169–171)

When you multiply a number by the whole numbers 0, 1, 2, 3, 4, and so on, you get **multiples** of the number. The **least common multiple (LCM)** of two or more numbers is the least of their common multiples, other than zero.

<b>Finding the Least Common Multiple (LCM)</b>	<p>To find the least common multiple of two or more numbers,</p> <ul style="list-style-type: none"> <li>make a list of several multiples of each number. Then identify the common multiples. The least of these is the LCM.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>write the prime factorization of each number. Write each prime factor as a multiplier the <i>greatest</i> number of times it appears in any one of the numbers.</li> </ul>
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## EXAMPLE

Find the LCM of 6, 36, and 40 by writing prime factorizations.

$$6 = 2 \times 3 \quad 36 = 2 \times 2 \times 3 \times 3 \quad 40 = 2 \times 2 \times 2 \times 5$$

Write each prime factor (2, 3, 5) as a multiplier the greatest number of times it appears in any one number. The factor 2 appears three times in 40. The factor 3 appears twice in 36. The factor 5 appears once in 40. The product of  $2 \times 2 \times 2 \times 3 \times 3 \times 5$ , or 360, is the least common multiple of 6, 36, and 40.

## Try These Together

1. Find the LCM of 12 and 30 by listing multiples.

*HINT: Look for the least common multiple in the two lists.*

2. Find the LCM of 12 and 14 by writing prime factorizations.

*HINT: Remember to write each prime factor as a multiplier the greatest number of times it appears in any one of the numbers.*

## PRACTICE

**Find the LCM of each set of numbers by listing multiples.**

3. 3, 10                      4. 6, 8                      5. 9, 12                      6. 3, 5, 6  
7. 4, 5, 10                      8. 5, 15                      9. 3, 8                      10. 18, 36

**Find the LCM of each set of numbers by writing prime factorizations.**

11. 6, 9                      12. 12, 18                      13. 8, 14                      14. 10, 36                      15. 20, 96                      16. 4, 6, 15

17. **Entertainment** Every 10 years, the people of Oberammergau, Germany, put on a special play. Rhonda's family travels to Germany every 3 years. If Rhonda's family was in Germany in the year 2000 and the play was on, what is the next year that the play will be on when Rhonda's family is in Germany?



18. **Standardized Test Practice** What is the least common multiple of 50 and 60?

- A** 200                      **B** 400                      **C** 300                      **D** 500

Answers: 1. 60 2. 84 3. 30 4. 24 5. 36 6. 30 7. 20 8. 15 9. 24 10. 36 11. 18 12. 36 13. 56 14. 180 15. 480 16. 60 17. 2030 18. C