Least Common Multiple

MAIN IDEA

- Find the least common multiple of two or more numbers.

BUILD YOUR VOCABULARY (pages 86–87)

A **multiple** of a number is the [＿＿＿] of the number

and any [＿＿＿].

Multiples of two or more [＿＿＿] are **common multiples**.

The [＿＿＿] number other than 0 that is a multiple of two or more whole numbers is the **least common multiple (LCM)** of the numbers.

EXAMPLE   Identify Common Multiples

1 Identify the first three common multiples of 3 and 9.

First, list the multiples of each number.

multiples of 3:

[＿＿＿]

multiples of 9:

[＿＿＿]

Notice that 9, 18, and 27 are multiples common to both 3 and 9. So, the first 3 common multiples of 3 and 9 are

[＿＿＿].

Check Your Progress   Identify the first three common multiples of 2 and 7.

[＿＿＿]

EXAMPLE   Find the LCM

1 **Find the LCM of 8 and 18.**

Write the prime factorizations of each number. Identify all common prime factors.

$$8 = ❨2❩\times 2 \times 2$$
$$18 = ❨2❩\times 3 \times 3$$

Find the product of the prime factors using each common prime factor only once and any remaining factors. The LCM is
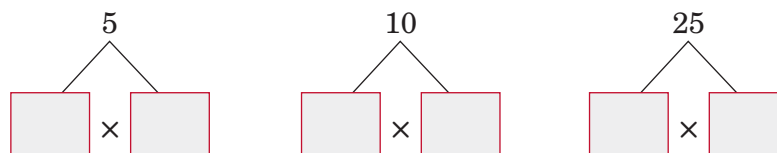
☐ × ☐ × ☐ × ☐ × ☐ or 72.

Check Your Progress   Find the LCM of 9 and 21.

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REVIEW IT

Why is the number 1 neither prime nor composite? *(Lesson 1-2)*

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EXAMPLE

2 **MONEY** **Liam, Eva, and Brady each have the same amount of money. Liam has only nickels, Eva has only dimes, and Brady has only quarters. What is the least amount of money that each of them could have?**

Find the LCM using prime factors.

5   10   25

☐ × ☐   ☐ × ☐   ☐ × ☐

The least amount of money that each of them could have is

☐ × ☐ × ☐ or ☐ .

Check Your Progress   **CANDY** Michael, Logan, and Diego each have bags of candy that have the same total weight. Michael's bag has candy bars that each weigh 4 ounces, Logan's bag has candy bars that each weigh 6 ounces, and Diego's bag has candy bars that each weigh 9 ounces. What is the least total weight that each of them could have?

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HOMEWORK ASSIGNMENT

Page(s):

Exercises:

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