Name Date Time

LESSON 8•1

Exploring Least Common Multiples

One way to find a common denominator is to use the least common multiple. The LCM is the smallest number that is a multiple of the given denominators.

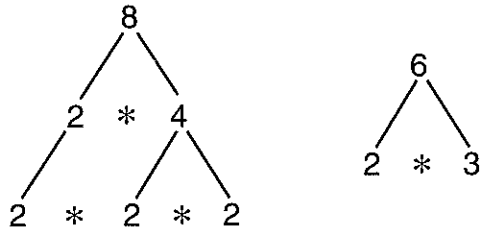
You can find the least common multiple by making lists of multiples.

Find the least common multiple for $\frac{4}{9}$, $\frac{5}{6}$, and $\frac{1}{4}$. List the multiples of each denominator.

- Multiples of 9: _____
- Multiples of 6: _____
- Multiples of 4: _____
- Least common multiple: _____

Another way to find the least common multiple is to use prime factorization.

Find the least common multiple for 8 and 6.



Step 1 Use factor trees to find the prime factorization.

Step 2 Count the appearance of each different prime number. Note only the largest counts.

- 2 appears 3 times in the prime factorization of 8.
- 3 appears once in the prime factorization of 6.

Step 3 Write a multiplication expression using these counts.

- $2 * 2 * 2 * 3 = 24$ so 24 is the least common multiple of 8 and 6.

Use the prime factorization method to find the LCM.

1. 9, 6, and 4 LCM: _____

2. 20 and 90 LCM: _____

3. 15 and 49 LCM: _____

4. 12, 15, and 25 LCM: _____

5. What might be an advantage or disadvantage to using the prime factorization method to find the least common multiple?

_____

_____