

LESSON
2-2

Least Common Multiple

Reteach

The smallest number that is a multiple of two or more numbers is called the least common multiple (LCM) of those numbers.

To find the least common multiple of 3, 6, and 8, list the multiples for each number and put a circle around the LCM in the three lists.

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24

Multiples of 6: 6, 12, 18, 24, 30, 36, 42

Multiples of 8: 8, 16, 24, 32, 40, 48, 56

So 24 is the LCM of 3, 6, and 8.

List the multiples of each number to help you find the least common multiple of each group.

1. 2 and 9

Multiples of 2:

Multiples of 9:

LCM: _____

2. 4 and 6

Multiples of 4:

Multiples of 6:

LCM: _____

3. 4 and 10

Multiples of 4:

Multiples of 10:

LCM: _____

4. 2, 5, and 6

Multiples of 2:

Multiples of 5:

Multiples of 6:

LCM: _____

5. 3, 4, and 9

Multiples of 3:

Multiples of 4:

Multiples of 9:

LCM: _____

6. 8, 10, and 12

Multiples of 8:

Multiples of 10:

Multiples of 12:

LCM: _____

7. Pads of paper come 4 to a box, pencils come 27 to a box, and erasers come 12 to a box. What is the least number of kits that can be made with paper, pencils, and erasers with no supplies left over?

12. Caps: 3, 6, 9...36, 39, 45; shirts: 5, 10...35, 40, 45; 15 packages of caps will be needed and 9 packages of shirts will be needed.
13. The LCM of 8 and 7 is 56, which is greater than any other LCM of 8 and a number less than 8. This insures that the consumer will have to buy the greatest number of packages of buns in order to use up all 8 hot dogs.
14. The GCF and the LCM are alike, because they are used to find common divisors of two numbers. The GCF and LCM are different in that the GCF is found by looking at the factors of a number, whereas the LCM is found by looking at the multiples of a number.

Practice and Problem Solving: C

1. 4
2. 60
3. 240
4. 240
5. The product of two numbers is equal to the product of their GCF and LCM.
6. 4
7. Answers will vary. Sample answers: (2, 6), (3, 4), (4, 3), (6, 2).
8. $\frac{1}{3}, \frac{2}{3}, \frac{3}{3}, \frac{4}{3}, \frac{5}{3}, \frac{6}{3}, \frac{2}{5}, \frac{4}{5}, \frac{6}{5}, \frac{8}{5}, \frac{10}{5}, \frac{12}{5}$
9. $\frac{6}{3} = \frac{10}{5} = 2$
10. $\frac{1}{15}$
11. $\frac{1}{15} \cdot x = \frac{1}{3}, x = 5;$
 $\frac{1}{15} \cdot y = \frac{2}{5}, y = 6;$
 are answers for Exercise 8.

Practice and Problem Solving: D

1. 4, 8, 12, 16, and 20
2. 13, 26, 39, 52, and 65
3. 250, 500, 750, 1,000, and 1,250
4. 5, 10, 15, 20, 25, 30, 35, 40; 8, 16, 24, 32, 40; 40

5. 6, 12, 18, 24, 30; 10, 20, 30; 30
6. 3, 6, 9, 12, 15; 15; 15
7. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30; 3, 6, 9, 12, 15, 18, 21, 24, 27, 30; 5, 10, 15, 20, 25, 30; 30
8. Count cups by 15's and plates by 10's. Cups: 15, 30; plates: 10, 20, 30; the least number is 2 packs of cups and 3 packs of plates.
9. Count invitations by 12's: 12, 24, 36, 48; count napkins by 24's: 24, 48; the least number is 4 packs of invitations and 2 packs of napkins.

Reteach

1. 2, 4, 6, 8, 10, 12...18; 9, 18, 27, 36 ...; 18
2. 4, 8, 12...; 6, 12...; 12
3. 4, 8, 12, 16, 20...; 10, 20...; 20
4. 2, 4, 6...26, 28, 30...; 5, 10, 15, 20, 25, 30...; 6, 12, 18, 24, 30; 30
5. 3, 6, 9...33, 36...; 4, 8, 12...28, 32, 36; 9, 18, 27, 36; 36
6. 8, 16, 24...112, 120; 10, 20...110, 120; 12, 24, 36...108, 120; 120
7. Pads: 4, 8, 12, 16...100, 104, 108 (27 boxes)
 Pencils: 27, 54, 81, 108... (4 boxes)
 Erasers: 12, 24, 36, 48, 60, 72, 84, 96, 108... (9 boxes)
 LCM is 108, so 108 kits made from 27 boxes of pads, 4 boxes of pencils, and 9 boxes of erasers.

Reading Strategies

1. 5, 10, 15, 20, 25, 30, 35, 40, 45, and 50
2. 10, 20, 30, 40, and 50
3. 10, 20, 30, 40, and 50
4. 10
5. 10
6. Write the multiples of the numbers.
7. Find the least common multiple of the numbers.
8. After you have written the multiples, find the smallest multiple that is common to both lists of multiples.