

PART I GET STARTED

Today's Mathematics

We will identify the LCM, use it with repeating events, and find least common denominators.

Essential Question

How can you find the least common multiple of two or more numbers?

DO NOW

Review Section 1.5. Find each greatest common factor.

1. GCF of 9 and 15
2. GCF of 8 and 28
3. GCF of 45 and 63
4. GCF of 24 and 36

SEE IT

One bell rings every 8 minutes and another rings every 12 minutes. They ring together now.

1. List the first six positive multiples of 8.
2. List the first six positive multiples of 12.
3. When will both bells next ring together? Why is that time a least common multiple?

QUICK WRITE | 2 MINUTES

Explain the difference between a common multiple and the least common multiple.

PART II INVESTIGATE**ORGANIZE THE MULTIPLES**

List enough multiples to locate the first positive number shared by both lists.

Multiples of first	Multiples of second	Common multiples	LCM
8	12		
10	15		

CONNECT THE METHODS

Prime-factor one pair. Explain how choosing each prime factor the greatest number of times it appears produces the same LCM.

PART III MAKE SENSE AND PRACTICE

WHAT WE CAN CONCLUDE

1. A common multiple is a positive multiple shared by all the numbers. 2. The LCM is the least positive common multiple. 3. The LCM gives the first time repeating events occur together again. 4. The least common denominator (LCD) is the LCM of fraction denominators.

WORKED MODEL

$10 = 2 \cdot 5$ and $12 = 2^2 \cdot 3$. Use 2^2 , 3, and 5: $\text{LCM}(10, 12) = 2^2 \cdot 3 \cdot 5 = 60$.

FOCUSED PRACTICE

Show a clear strategy and enough work that another student could follow your reasoning.

1. Find the LCM of 14 and 21 using lists of multiples.
2. Correct the error: $10 = 2 \cdot 5$, $15 = 3 \cdot 5$, so the LCM is 5.

LCD CONNECTION

For $\frac{1}{6}$ and $\frac{1}{8}$, $\text{LCD} = \text{LCM}(6, 8) = 24$. Rewrite: $\frac{1}{6} = \frac{4}{24}$ and $\frac{1}{8} = \frac{3}{24}$. Find the LCD of $\frac{5}{12}$ and $\frac{7}{18}$, then rewrite both fractions.

CHALLENGE

Create a new problem that uses today's idea and has a whole-number answer. Trade with a partner and solve.

MATH WRITE | 5 MINUTES

Explain how you know whether a real-life situation calls for a GCF or an LCM.

PART IV PUZZLE PRACTICE

Homework

Name _____ Date _____

WHAT DOES A COMPUTER DO WHEN IT GETS HUNGRY?

Find each LCM. Write the letter of its answer in the decoder.

1. 5, 9
2. 2, 11
3. 12, 16
4. 3, 8
5. 7, 9
6. 10, 14
7. 13, 39
8. 30, 45
9. 14, 21
10. 6, 10
11. 15, 20
12. 18, 24
13. 2, 3, 11
14. 2, 4, 6
15. 8, 10, 16

16. One radio station plays a commercial every 6 minutes. Another plays one every 9 minutes. Both just played commercials. How many minutes will pass before they play commercials at the same time again?

T:60	E:22	E:42	B:63	E:72	T:80	S:70	Y:12
T:45	G:30	O:39	T:18	I:24	A:90	T:66	A:48

4	13	10	2	15	6	8	5
14	1	12	16	7	9	3	11