

The Grid Method for LCM

Lesson 2-2

DATE _____

TIME _____

The grid method can be an easier way to find both the GCF and LCM for pairs of large numbers.

Study the examples below to see how the grid method can be used to find the LCM.

2	42	30
3	21	15
	7	5

$$\text{GCF}(42, 30) = 2 * 3 = 6$$

$$\text{LCM}(42, 30) = 2 * 3 * 7 * 5 = 210$$

3	15	45
5	5	15
	1	3

$$\text{GCF}(15, 45) = 3 * 5 = 15$$

$$\text{LCM}(15, 45) = 3 * 5 * 1 * 3 = 45$$

- 1 Make a GCF/LCM grid for 32 and 36. Show your work.

a. $\text{GCF}(32, 36) = \underline{4}$

b. $\text{LCM}(32, 36) = \underline{288}$

4	32	36
	8	9

2	32	36
2	16	18
	8	9

- 2 Use grids to find the GCF and LCM for each pair of numbers.

a. $\text{GCF}(28, 98) = \underline{\hspace{2cm}}$

$\text{LCM}(28, 98) = \underline{\hspace{2cm}}$

b. $\text{GCF}(108, 144) = \underline{\hspace{2cm}}$

$\text{LCM}(108, 144) = \underline{\hspace{2cm}}$

c. $\text{GCF}(135, 180) = \underline{\hspace{2cm}}$

$\text{LCM}(135, 180) = \underline{\hspace{2cm}}$

d. $\text{GCF}(125, 500) = \underline{\hspace{2cm}}$

$\text{LCM}(125, 500) = \underline{\hspace{2cm}}$

Using Least Common Multiple

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You can use the least common multiple to find the least common denominator.

Example: Find equivalent fractions.

$$\text{LCM}(15, 10) = 30$$

$$\frac{8}{15} = \frac{8 \cdot 2}{15 \cdot 2} = \frac{16}{30} \quad \text{a}$$

$$\frac{3}{4} \quad \frac{1}{6}$$

$$\begin{array}{c|c|c} 2 & 4 & 6 \\ \hline & 2 & 3 \\ \hline \end{array}$$

$$\frac{3 \cdot 3}{4 \cdot 3} = \frac{9}{12}$$

$$\frac{1 \cdot 2}{6 \cdot 2} = \frac{2}{12}$$

Use the LCM to find the equivalent fractions.

1 $\frac{3}{4}$ and $\frac{1}{6}$

$$\text{LCM}(4, 6) = \frac{12}{\frac{9}{12} \text{ and } \frac{2}{12}}$$

- 4 a. Cathy has 30 granola bars and 48 boxes of raisins. She is dividing them into identical packages. What is the greatest number of packages she can make?

6 packages of 5 granola bars + 8 boxes raisins

- b. Explain how you used GCF or LCM to solve the problem.

GCF = 6
LCM = 240

$$\begin{array}{c|c|c} 6 & 30 & 48 \\ \hline & 5 & 8 \\ \hline \end{array}$$

- 5 a. Suppose a new car's oil is changed every 5,000 miles and its tires are rotated every 8,000 miles. What is the earliest mileage at which it will need both? _____
- b. Explain how you used GCF or LCM to solve the problem.

Try This

- 6 a. Visitors to an amusement park were surveyed about their experiences. Every 50th visitor rated cleanliness. Every 100th visitor rated food quality. Every 150th visitor rated the wait time in lines. What number customer was the first to be asked all three questions? _____
- b. Explain how you used GCF or LCM to solve the problem.

Finding Landmarks

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- 1 Callie wants to know more about tall buildings. She asks the three questions below. Circle the statistical question(s).

What is the world's tallest building?

About how tall are the tallest buildings in the world?

What is the difference between the height of the tallest building in the world and the height of Willis Tower?

Building	Location	Height (feet)
Burj Khalifa	Dubai, United Arab Emirates	2,717
Shanghai Tower	Shanghai, China	2,073
Makkah Royal Clock Tower Hotel	Mecca, Saudi Arabia	1,972
One World Trade Center	New York City, United States	1,776
Taipei 101	Taipei, Taiwan	1,667
Shanghai World Financial Center	Shanghai, China	1,614
International Commerce Center	Hong Kong, China	1,588
Petronas Towers	Kuala Lumpur, Malaysia	1,483
Zifeng Tower	Nanjing, China	1,476
Willis Tower	Chicago, United States	1,451

- 2 Find the following landmarks based on the table above:

Maximum: _____

Minimum: _____

Median: _____

Mode: _____

Range: _____

Mean: _____

- 3 Why does it make sense that the mean and median are almost the same for this data set?

1 Add or subtract.

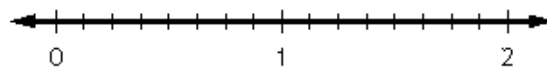
a. $1\frac{3}{4} + 2\frac{1}{4} = \underline{\hspace{2cm}}$

b. $\underline{\hspace{2cm}} = 5\frac{2}{3} - 3\frac{1}{3}$

c. $8\frac{5}{6} - \underline{\hspace{2cm}} = 5\frac{1}{6}$

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2 Mark and label each fraction on the number line.



A: $\frac{1}{2}$ B: $\frac{9}{8}$ C: $\frac{7}{8}$ D: $1\frac{3}{4}$

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94

3 Christian has 3 pounds of apples. His applesauce recipe uses $\frac{1}{2}$ pound of apples per serving. Write a number model he can use to find the number of servings of applesauce he can make.

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32

4 Rename each mixed number as a fraction.

a. $\underline{\hspace{2cm}} = 4\frac{2}{5}$

b. $8\frac{1}{9} = \underline{\hspace{2cm}}$

c. $2\frac{3}{7} = \underline{\hspace{2cm}}$

d. $9\frac{1}{2} = \underline{\hspace{2cm}}$

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5 Check all questions below that are statistical questions.

- How many pets do typical sixth graders at our school have?
- How many books does the school library have?
- How old is the president of the United States?
- How much homework do parents think students should have?

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280

6 Compute.

a. $10 + (12 * 5) = \underline{\hspace{2cm}}$

b. $(21 - 3) * 4 = \underline{\hspace{2cm}}$

c. $\underline{\hspace{2cm}} = 9 \div (19 - 16) + 7$

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