

When the Greatest Is Part of the Least

Least Common Multiple

While finding the least common multiple of several pairs of numbers, Jose came up with a way to use the greatest common factor of the numbers to find the least common multiple. He then used his method to write the riddles below. Solve Jose’s riddles by using only the numbers given in the riddle. Then describe Jose’s method for finding the least common multiple. (Hint: Use the **SIMP** key on your calculator.)

	1. Our GCF is 5. If you write us as a fraction in simplest form, you get $\frac{3}{8}$.
<input type="radio"/>	What two numbers are we? What is our least common multiple?
	2. Our GCF is 18. If you write us as a fraction in simplest form, you get $\frac{1}{3}$.
	What two numbers are we? What is our least common multiple?
	3. Our GCF is 2. If you write us as a fraction in simplest form, you get $\frac{5}{6}$.
<input type="radio"/>	What two numbers are we? What is our least common multiple?
	4. Our GCF is 7. If you write us as a fraction in simplest form, you get $\frac{2}{5}$.
	What two numbers are we? What is our least common multiple?
	5. Our GCF is 12. If you write us as a fraction in simplest form, you get $\frac{3}{4}$.
<input type="radio"/>	What two numbers are we? What is our least common multiple?

Thinking Cap



Write some additional riddles like Jose’s. Explain why you wrote the riddles you did.

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Topic: Least Common Multiple

Objective: To use the calculator to find the least common multiple of two numbers.

NCTM Standards: Problem Solving, Reasoning, Number Systems and Number Theory

Using the Activity

Students use the calculator in this activity to find the answers to the riddles about the LCM of two numbers and then to create riddles of their own.

- The **[X]** key can be used to multiply to find the numbers.
- The **[b/c]** key can be used to enter the numbers as a fraction.
- The **[SIMP]** key can be used to find the common factors of the numbers.

Example To find the numbers in riddle 1, multiply 5 times the numerator and the denominator of the fraction: $5 \times 3 = 15$ and $5 \times 8 = 40$. To find the LCM of 15 and 40, multiply the three numbers mentioned in the riddle: $5 \times 3 \times 8 = 120$.

Assessment Encourage students to check their answers by dividing the LCM by each of the two numbers they found. If their answer is correct, the two quotients should have a GCF of 1.

Answers

1. See example.
2. The two numbers are $18 \times 1 = 18$ and $18 \times 3 = 54$. The LCM of 18 and 54 is $18 \times 1 \times 3 = 54$.
3. The two numbers are $2 \times 5 = 10$ and $2 \times 6 = 12$. The LCM of 10 and 12 is $2 \times 5 \times 6 = 60$.
4. The two numbers are $7 \times 2 = 14$ and $7 \times 5 = 35$. The LCM of 14 and 35 is $7 \times 2 \times 5 = 70$.
5. The two numbers are $12 \times 3 = 36$ and $12 \times 4 = 48$. The LCM of 36 and 48 is $12 \times 3 \times 4 = 144$.

Jose wrote the two numbers as a fraction and then used the **[SIMP]** key on the calculator to find the GCF of the two numbers. He then multiplied the GCF by each of the numbers in the simplified fraction to find the LCM.

Thinking Cap Answers

Answers may vary. All riddles should be written using the procedure described above.