

NAME \_\_\_\_\_

Module 4 Fractions, Decimals, Percents, and Factors  
Lesson 4 Prime Factorization, GCF, and LCM

# Independent Practice

## 4.4

Find the LCM.

- |                            |                              |                               |                             |
|----------------------------|------------------------------|-------------------------------|-----------------------------|
| 1. 8 and 12<br><b>24</b>   | 2. 27 and 36<br><b>108</b>   | 3. 6 and 10<br><b>30</b>      | 4. 18 and 81<br><b>162</b>  |
| 5. 8 and 120<br><b>120</b> | 6. 2, 7, and 14<br><b>14</b> | 7. 2, 11, and 44<br><b>44</b> | 8. 4, 5, and 8<br><b>40</b> |

Find the LCM using prime factorization. Show all work.

- |                            |                                |                                  |
|----------------------------|--------------------------------|----------------------------------|
| 9. 24 and 30<br><b>120</b> | 10. 40 and 50<br><b>200</b>    | 11. 20 and 30<br><b>60</b>       |
| 12. 18 and 72<br><b>72</b> | 13. 2, 12, and 15<br><b>60</b> | 14. 20, 30, and 40<br><b>120</b> |

Solve each problem.

15. A radio station gives every 10th caller a movie pass. Every 35th caller receives a \$50 gift card. Which caller will be the first to receive both?  
**70th caller**

Solve each problem.

16. Perez wants to invite as many friends as possible to his party. He is making a party gift bag for each person with an equal number of each type of gift in each bag. He has 48 pencils, 32 packs of stickers, and 128 pieces of candy. How many friends can he invite? How many of each item is in each party gift bag?

**Sixteen friends: three pencils, two packs of stickers, and eight pieces of candy in each bag**

17. Three cars on a race track cross a certain point at the same time. Each car is driving at a constant rate. The purple car makes a lap every 90 seconds, the orange car makes a lap every 100 seconds, and the brown car makes a lap every 72 seconds. How many minutes will go by before all three cars cross the point at the same time again?

**LCM = 1800  $1800 \div 60 = 30$**

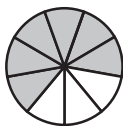
**30 minutes**

### Journal

1. Explain how to find the GCF of 12 and 20.
2. Explain how to find the LCM of 12 and 20.
3. Which is greater, the GCF of two different numbers or the LCM of those numbers? Explain.
4. Explain when you would need to find the LCM to solve a word problem.

### Cumulative Review

1. Name the fraction shown by the shaded region.



$\frac{6}{9}$

2. What is the ratio of shaded pentagons to the entire group of pentagons? Express the ratio in all three ways.



**3:4    3 to 4     $\frac{3}{4}$**

NAME \_\_\_\_\_

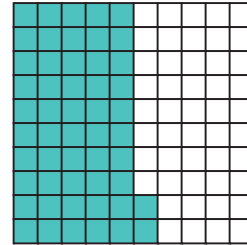
**Module 4      Fractions, Decimals, Percents, and Factors**  
**Lesson 4      Prime Factorization, GCF, and LCM**

3. What is the ratio of K's to H's?  
Express the ratio in all three ways.

H H H H H K K

$2:5$      $2 \text{ to } 5$      $\frac{2}{5}$

4. Write the fraction of the model that is shaded, the ratio of shaded squares to total squares, and the percent that is shaded.



$\frac{52}{100}$      $52:100$      $52\%$

5. Complete the table.

Fraction	Decimal	Percent
	0.60	

$\frac{60}{100}$                        $60\%$

6. Find the factors of 90.  
 $1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90$

7. Tell whether the number 23 is prime or composite.

**prime**

8. Find the prime factorization of 81.

$3^4$

9. Find the common factors of 28 and 80.

$1, 2, 4$

10. Find the Greatest Common Factor (GCF) of 40 and 72.

$8$

### Possible Journal Answers

1. To find the GCF of 12 and 20, I would find the prime factorization of each number, lining up the common factors.

$$12 = \boxed{2} \times \boxed{2} \times 3$$

$$20 = \boxed{2} \times \boxed{2} \times 5$$

The product of the common prime factors of both numbers is the GCF.

$$\text{GCF} = 2 \times 2 = 4$$

The GCF of 12 and 20 is four.

2. To find the LCM of 12 and 20, I would find the prime factorization of each number, lining up the common factors. Then, I would draw arrows down from each factor or each set of factors. The LCM is the product of these factors.

$$12 = 2 \times 2 \times 3$$

$$20 = 2 \times 2 \times 5$$

↓ ↓ ↓ ↓

$$\text{LCM} = 2 \times 2 \times 3 \times 5 = 60$$

The LCM of 12 and 20 is 60.

3. The LCM of two different numbers is greater than the GCF. To find the GCF and LCM, I find the prime factorization of both numbers, lining up the common factors. The LCM contains all the factors of each number, including the common factors. The GCF contains only the factors common to both numbers.
4. An LCM is useful when a problem lists items that are purchased in different quantities and asks for the number common to each quantity that will result in an equal number of each type of item.