

Vocabulary and Concept Check

- VOCABULARY** What is the least common multiple (LCM) of two numbers?
- WRITING** Describe how to find the LCM of two numbers by using prime factorization.

Practice and Problem Solving

Use a Venn diagram to find the least common multiple of the numbers.

3. 3, 7

4. 6, 8

5. 12, 15

Find the LCM of the numbers using lists of multiples.

1 6. 2, 9

7. 3, 4

8. 8, 9

9. 5, 8

10. 15, 20

11. 12, 18

Find the LCM of the numbers using prime factorizations.

2 12. 9, 21

13. 12, 27

14. 18, 45

15. 22, 33

16. 36, 60

17. 35, 50



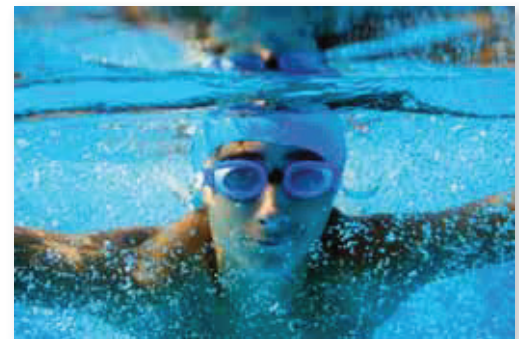
$6 \times 9 = 54$

The LCM of 6 and 9 is 54.

18. **ERROR ANALYSIS** Describe and correct the error in finding the LCM.

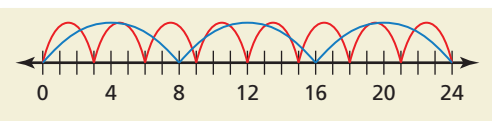
19. **AQUATICS** You have diving lessons every fifth day and swimming lessons every third day. Today you have both lessons. In how many days will you have both lessons on the same day again?

20. **HOT DOGS** Hot dogs come in packs of 10, while buns come in packs of eight. What are the least numbers of packs you should buy in order to have the same numbers of hot dogs and buns?

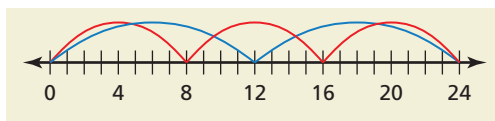


21. **MODELING** Which model represents an LCM that is different from the other three? Explain your reasoning.

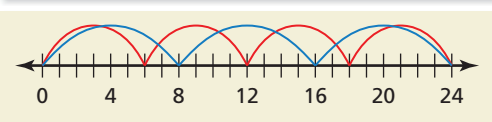
A.



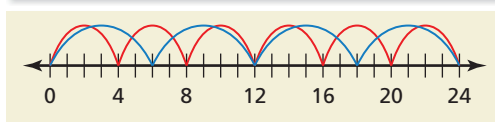
B.



C.



D.



Find the LCM of the numbers.

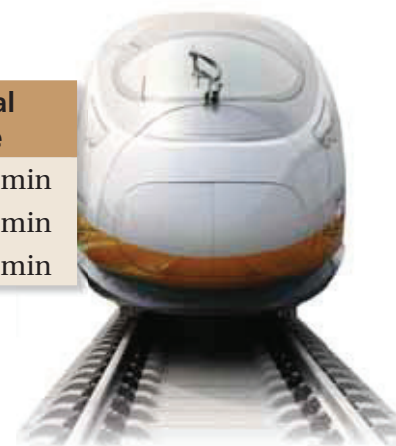
22. 2, 3, 7 23. 3, 5, 11 24. 4, 9, 12
 25. 6, 8, 15 26. 7, 18, 21 27. 9, 10, 28
28. **REASONING** You need to find the LCM of 13 and 14. Would you rather list their multiples or use their prime factorizations? Explain.

CRITICAL THINKING Tell whether the statement is *always*, *sometimes*, or *never* true.

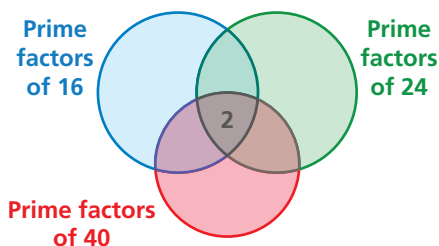
29. The LCM of two different prime numbers is their product.
 30. The LCM of a set of numbers is equal to one of the numbers in the set.
 31. The GCF of two different numbers is the LCM of the numbers.

32. **SUBWAY** At Union Station, you notice that three subway lines just arrived at the same time. The table shows their arrival schedule. How long must you wait until all three lines arrive at Union Station at the same time again?

Subway Line	Arrival Time
A	every 10 min
B	every 12 min
C	every 15 min



33. **RADIO CONTEST** A radio station gives away \$15 to every 15th caller, \$25 to every 25th caller, and free concert tickets to every 100th caller. When will the station first give away *all* three prizes to one caller?
34. **TREADMILL** You and a friend are running on treadmills. You run 0.5 mile every 3 minutes, and your friend runs 2 miles every 14 minutes. You both start and stop running at the same time and run a whole number of miles. What is the least possible number of miles you and your friend can run?



35. **VENN DIAGRAM** Refer to the Venn diagram.
- Copy and complete the Venn diagram.
 - What is the LCM of 16, 24, and 40?
 - What is the LCM of 16 and 40? 24 and 40?

36. **Number Sense** When is the LCM of two numbers equal to their product?



Fair Game Review What you learned in previous grades & lessons

Write the product as a power. (Section 1.2)

37. 3×3 38. $5 \cdot 5 \cdot 5 \cdot 5$ 39. $17 \times 17 \times 17 \times 17 \times 17$
40. **MULTIPLE CHOICE** Which two powers have the same value? (Section 1.2)
- (A) 1^3 and 3^1 (B) 2^4 and 4^2 (C) 3^2 and 2^3 (D) 4^3 and 3^4