

LESSON

4.4

Vocabulary

multiple, p. 189

Least Common Multiple

BEFORE

You found the GCF of two numbers.

Now

You'll find the least common multiple of two numbers.

WHY?

So you can design a fitness schedule, as in Ex. 38.

$$\frac{-12 \div 3}{27 \div 3}$$

$$\frac{25}{-35}$$

$$\frac{-33}{-55}$$

$$\frac{-4}{9}$$

$$\frac{48x^2y}{36xy^2}$$

$$\frac{8 \cdot 2^2 \cdot 3}{6 \cdot 2^2 \cdot 3^2}$$

$$\frac{96}{216} = \frac{4}{9}$$

$$\frac{4}{3y} = \frac{4}{9}$$

$$x=2$$
$$y=3$$

A **multiple** of a whole number is the product of the number and any nonzero whole number. A multiple that is shared by two or more numbers is a **common multiple**. Some of the common multiples of 8 and 12 are shown in blue below.

Multiples of 8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, . . .

Multiples of 12: 12, 24, 36, 48, 60, 72, 84, 96, . . .

The least of the common multiples of two or more numbers is the **least common multiple (LCM)**. The LCM of 8 and 12 is 24.

Least Common Denominator The **least common denominator (LCD)** of two or more fractions is the least common multiple of the denominators. You can use the LCD to compare and order fractions.

LESSON

4.4

Name _____ Date _____

Practice A

For use with pages 189-194

Find the least common multiple of the numbers.

1. 9, 10

2. 4, 14

3. 8, 12

4. 6, 15

5. 18, 27

6. 24, 36

$$4 \ 8 \ 12 \ 14 \cdot \textcircled{28}$$

$$14 \ \textcircled{28} \dots$$

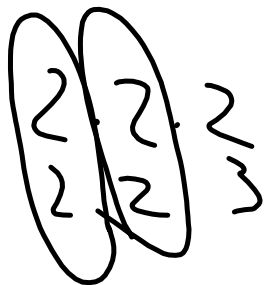
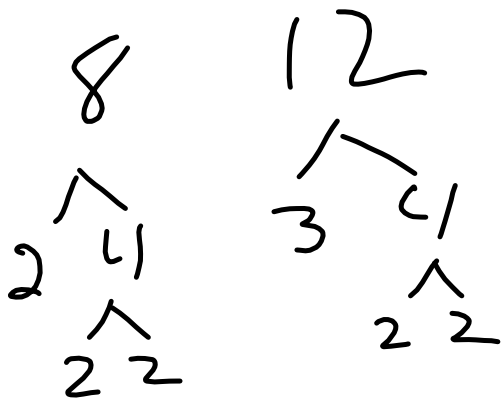
$$\begin{array}{c} 4 \\ \wedge \\ 2 \ 2 \end{array}$$

$$\begin{array}{c} 14 \\ \wedge \\ 2 \ 7 \end{array}$$

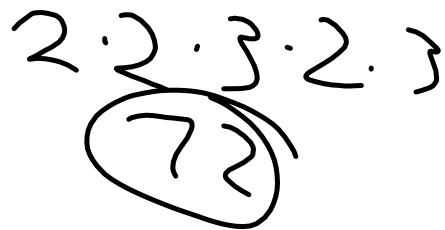
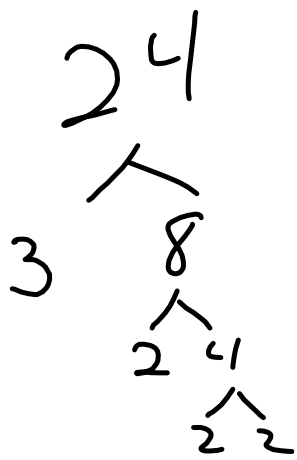
$$\begin{array}{c} \textcircled{2} \cdot 2 \\ \textcircled{2} \cdot 7 \end{array}$$

$$2 \cdot 2 \cdot 7$$

$$\textcircled{28}$$



$$\underline{2} \cdot \underline{2} \cdot 2 \cdot 3 \\
 \textcircled{24}$$



Find the least common multiple of the monomials.

7. $5a, a^2$

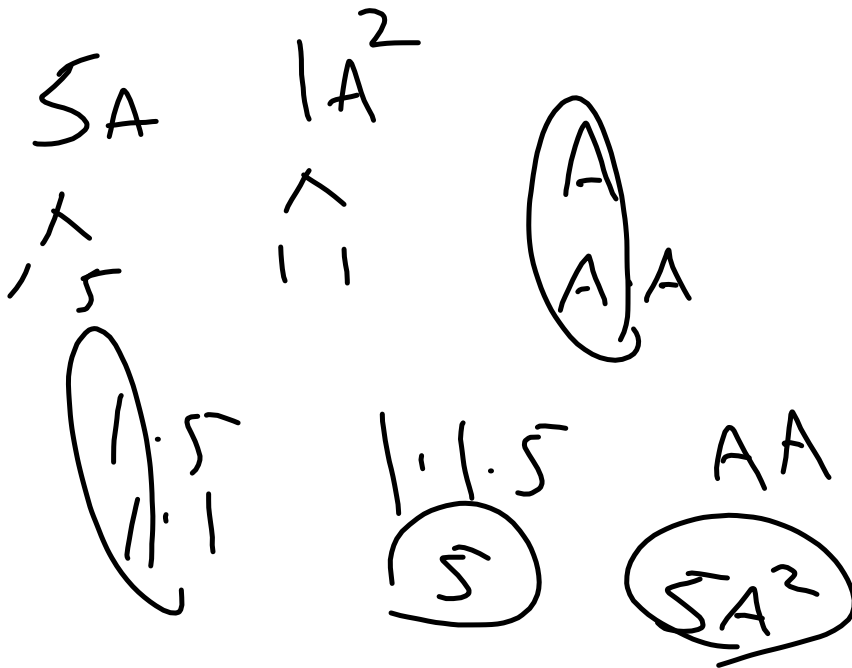
8. m^3, m^5

9. $x^3, 8x^4$

10. $6d^2, 44d^3$

11. $22k^4, 34k^2$

12. $3g^5, 20g^2$



$$6D^2$$

$\swarrow \searrow$
2 3

$$44D^3$$

$\swarrow \searrow$
4 11

$\swarrow \searrow$
2 2

$$(2,2) \cdot 3$$

2 11

$$132D^3$$

$$2 \cdot 2 \cdot 3 \cdot 11$$

(132)

39



3
2 2 5

2.2.3.5

6095

9 9 9 9 9

9 9 9 9 9

Use the LCD to determine which fraction is greater.

13. $\frac{1}{3}, \frac{3}{8}$

14. $\frac{4}{5}, \frac{5}{7}$

15. $\frac{3}{4}, \frac{7}{10}$

$\frac{28}{35}$ $\frac{7.4}{7.5}$ $\frac{5.5}{7.5}$ $\frac{25}{35}$

$$16. \frac{7}{12}, \frac{13}{15}$$

$$17. \frac{11}{20}, \frac{17}{24}$$

$$18. \frac{2}{5}, \frac{3}{11}$$

$$\frac{3 \cdot 5 \cdot 7}{40} \cdot \frac{7 \cdot 1}{5 \cdot 12}$$

$$\frac{13 \cdot 41}{15 \cdot 41}$$

$$\frac{52}{40}$$

$$\begin{array}{c} 12 \\ 3 \cdot 4 \\ \quad 2 \cdot 2 \end{array}$$

$$\begin{array}{c} 15 \\ 3 \cdot 5 \end{array}$$

$$\frac{2 \cdot 2 \cdot 7}{3 \cdot 5}$$

$$\frac{3 \cdot 2 \cdot 2 \cdot 5}{60}$$

$$\frac{22}{55}$$

$$\frac{11 \cdot 2}{11 \cdot 5}$$

$$\frac{3 \cdot 5}{11 \cdot 5} \cdot \frac{15}{55}$$

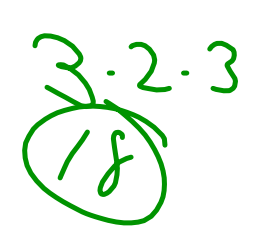
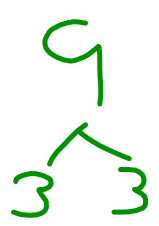
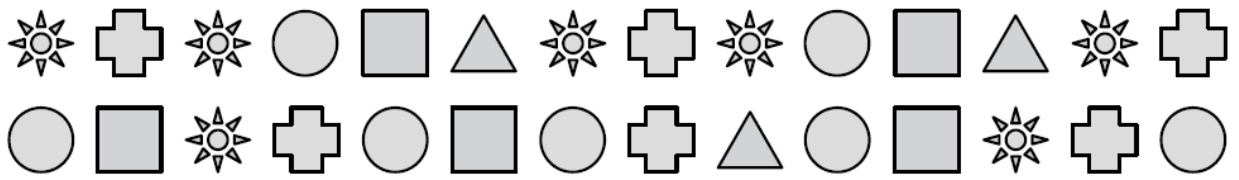
19. In April, it rained 16 out of 30 days. In May, it rained 8 out of 31 days. Which month had a greater fraction of rainy days?

$$\frac{16}{30}$$

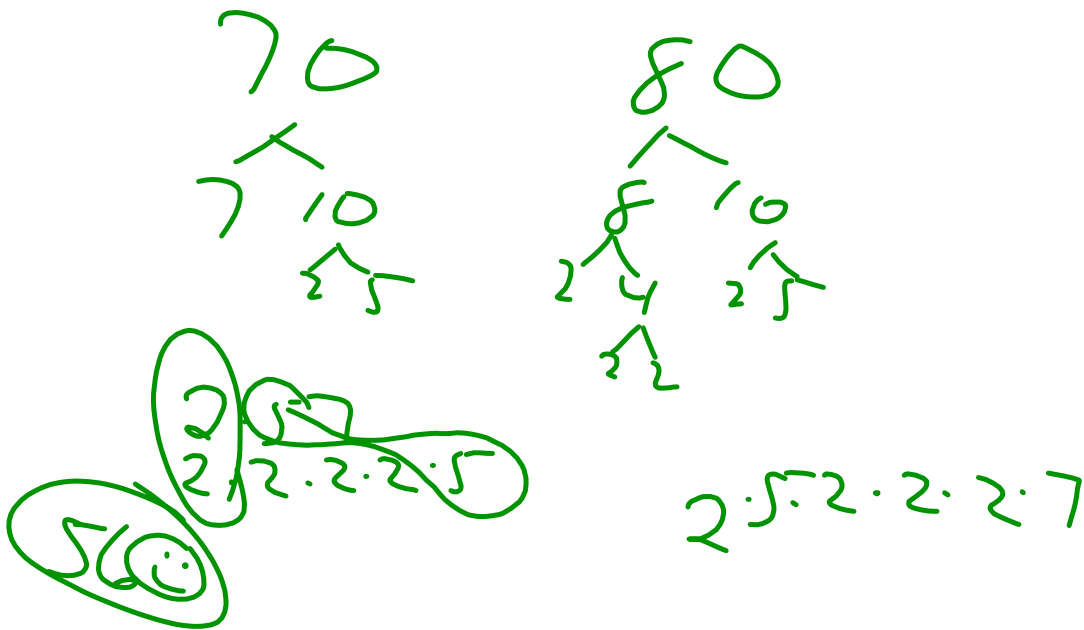
$$\frac{8 \cdot 30}{31 \cdot 30} = \frac{240}{930}$$

$$\frac{496}{930} \quad \left. \begin{array}{l} 31 \overline{) 16} \\ 31 \cdot 30 \end{array} \right\}$$

20. In the first pattern shown below, the triangle repeats every 6 figures. In the second pattern, the triangle repeats every 9 figures. How many figures after the first figure will both patterns have a triangle?



21. Noreen runs a lap around a track in 70 seconds while Elnora runs a lap around the same track in 80 seconds. The girls start their laps at the same time from the same place on the track and maintain their pace. When will they both be at their starting place at the same time again?



Order the numbers from least to greatest.

22. $\frac{12}{7}, \frac{11}{6}, 1\frac{9}{14}$

23. $\frac{95}{26}, \frac{15}{4}, 3\frac{8}{13}$

24. $\frac{23}{8}, 2\frac{5}{12}, \frac{8}{3}$

25. $\frac{10}{27}, \frac{1}{3}, \frac{5}{18}$

26. $\frac{23}{14}, \frac{13}{8}, 1\frac{3}{5}$

27. $4\frac{10}{21}, \frac{277}{63}, \frac{31}{7}$