

Least Common Multiple

Name _____

Date _____

The **least common multiple (LCM)** of two or more numbers is the least number, except 0, that is a common multiple of both (or all) of the numbers.

What is the LCM of 4, 6, and 8?

Multiples

4: 4, 8, 12, 16, 20, **24** . . .

6: 6, 12, 18, **24**, 30 . . .

8: 8, 16, **24**, 32 . . .

Least Common Multiple (LCM): 24

Find the LCM of each set of numbers.

1. 4, 7 _____

2. 3, 5 _____

3. 6, 12 _____

4. 5, 7 _____

5. 4, 24 _____

6. 7, 11 _____

7. 6, 15 _____

8. 9, 30 _____

9. 5, 8 _____

10. 1, 17 _____

11. 8, 48 _____

12. 3, 12 _____

13. 32, 48 _____

14. 2, 35 _____

15. 16, 64 _____

16. 10, 12 _____

17. 9, 36 _____

18. 14, 42 _____

19. 7, 8 _____

20. 11, 12 _____

21. 5, 10, and 15 _____

22. 3, 6, and 9 _____

23. 4, 8, and 12 _____

24. 2, 3, and 5 _____

25. 3, 4, and 6 _____

26. 4, 6, and 9 _____

27. 3, 5, and 9 _____

28. 3, 4, and 7 _____

29. 4, 7, and 8 _____

30. 4, 6, and 32 _____

31. 5, 8, and 20 _____

32. 3, 4, and 18 _____

Find the LCM of each pair of numbers. Use prime factorization.

33. 4, 10 _____

34. 2, 16 _____

35. 9, 27 _____

36. 5, 9 _____

37. 5, 25 _____

38. 4, 12 _____

39. 7, 11 _____

40. 2, 13 _____

Problem Solving

41. Tasha lists all the multiples of 3 from 3 to 99. Tony lists all the multiples of 5 from 5 to 100. What is the first number that is on both lists? the second?

Compare Fractions

Name _____

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Compare: $\frac{7}{12} ? \frac{11}{12}$

$$\frac{7}{12} ? \frac{11}{12} \rightarrow 7 < 11$$

$$\text{So } \frac{7}{12} < \frac{11}{12}.$$

Compare: $\frac{2}{3} ? \frac{3}{5}$

$$\frac{2}{3} ? \frac{3}{5} \quad \text{LCD is 15.}$$

$$\frac{2}{3} = \frac{?}{15} \rightarrow \frac{2 \times 5}{3 \times 5} = \frac{10}{15}$$

$$\frac{3}{5} = \frac{?}{15} \rightarrow \frac{3 \times 3}{5 \times 3} = \frac{9}{15}$$

$$10 > 9$$

$$\frac{10}{15} > \frac{9}{15} \text{ so } \frac{2}{3} > \frac{3}{5}.$$

The LCD of two fractions is the LCM of their denominators.

Compare. Write $<$, $=$, or $>$.

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

2. $\frac{3}{8} \underline{\hspace{1cm}} \frac{7}{8}$

3. $\frac{11}{12} \underline{\hspace{1cm}} \frac{11}{12}$

4. $\frac{9}{10} \underline{\hspace{1cm}} \frac{4}{10}$

5. $\frac{14}{25} \underline{\hspace{1cm}} \frac{21}{25}$

6. $\frac{5}{7} \underline{\hspace{1cm}} \frac{1}{7}$

7. $\frac{21}{28} \underline{\hspace{1cm}} \frac{24}{28}$

8. $\frac{17}{18} \underline{\hspace{1cm}} \frac{7}{18}$

9. $\frac{20}{30} \underline{\hspace{1cm}} \frac{25}{30}$

10. $\frac{9}{11} \underline{\hspace{1cm}} \frac{5}{11}$

Write the LCD of each pair of fractions. Then rename the fractions so they have the LCD as their denominator.

11. $\frac{3}{4}, \frac{2}{12}$ _____

12. $\frac{7}{8}, \frac{1}{2}$ _____

13. $\frac{2}{5}, \frac{3}{10}$ _____

14. $\frac{1}{4}, \frac{1}{5}$ _____

15. $\frac{1}{2}, \frac{3}{7}$ _____

16. $\frac{3}{8}, \frac{5}{12}$ _____

17. $\frac{5}{9}, \frac{1}{8}$ _____

18. $\frac{2}{3}, \frac{9}{10}$ _____

19. $\frac{4}{5}, \frac{1}{18}$ _____

Compare. Write $<$, $=$, or $>$.

20. $\frac{3}{4} \underline{\hspace{1cm}} \frac{3}{7}$

21. $\frac{7}{8} \underline{\hspace{1cm}} \frac{2}{5}$

22. $\frac{1}{4} \underline{\hspace{1cm}} \frac{3}{10}$

23. $\frac{2}{3} \underline{\hspace{1cm}} \frac{8}{12}$

24. $\frac{1}{2} \underline{\hspace{1cm}} \frac{5}{12}$

25. $\frac{4}{5} \underline{\hspace{1cm}} \frac{7}{9}$

26. $\frac{9}{12} \underline{\hspace{1cm}} \frac{3}{8}$

27. $\frac{14}{30} \underline{\hspace{1cm}} \frac{7}{15}$

28. $\frac{2}{5} \underline{\hspace{1cm}} \frac{15}{25}$

Problem Solving

29. Mrs. Johnson bought $\frac{5}{8}$ yd of gingham and $\frac{2}{3}$ yd of calico. Did she buy more gingham or more calico?

Order Fractions

Name _____

Date _____

Order from greatest to least:

- Compare the whole numbers.

- Rename each fraction using the LCD.

- Compare numerators.

- Write the numbers from greatest to least.

$$3\frac{1}{3}, 3\frac{9}{15}, \frac{17}{5}$$

$$\frac{17}{5} = 3\frac{2}{5}$$

$$3 = 3 = 3$$

$$3\frac{5}{15}, 3\frac{9}{15}, 3\frac{6}{15}$$

$$\text{LCD} = 15$$

$$\frac{9}{15} > \frac{6}{15} > \frac{5}{15}$$

$$3\frac{9}{15}, \frac{17}{5}, 3\frac{1}{3}$$

Write in order from least to greatest.

1. $\frac{5}{12}, \frac{1}{12}, \frac{7}{12}$

2. $\frac{8}{15}, \frac{11}{15}, \frac{4}{15}$

3. $\frac{3}{4}, \frac{1}{8}, \frac{5}{8}$

4. $\frac{5}{9}, \frac{1}{3}, \frac{2}{9}$

5. $\frac{3}{10}, \frac{1}{2}, \frac{3}{5}$

6. $\frac{1}{6}, \frac{1}{9}, \frac{1}{3}$

7. $\frac{3}{4}, \frac{5}{6}, \frac{7}{9}$

8. $\frac{3}{10}, \frac{1}{4}, \frac{2}{5}$

9. $5\frac{2}{3}, 5\frac{5}{9}, 5\frac{11}{15}$

10. $1\frac{1}{3}, 1\frac{3}{5}, 1\frac{3}{10}$

11. $7\frac{5}{12}, 7\frac{1}{2}, 7\frac{3}{8}$

12. $4\frac{9}{10}, 4\frac{3}{4}, 4\frac{5}{8}$

Write in order from greatest to least.

13. $\frac{3}{8}, \frac{7}{8}, \frac{5}{8}$

14. $\frac{7}{10}, \frac{3}{10}, \frac{9}{10}$

15. $\frac{4}{15}, \frac{4}{5}, \frac{3}{5}$

16. $\frac{7}{12}, \frac{1}{4}, \frac{5}{12}$

17. $\frac{11}{12}, \frac{7}{8}, \frac{5}{6}$

18. $\frac{3}{7}, \frac{1}{4}, \frac{5}{14}$

19. $\frac{4}{9}, \frac{1}{3}, \frac{1}{2}$

20. $\frac{2}{3}, \frac{8}{15}, \frac{7}{12}$

21. $8\frac{3}{10}, 8\frac{7}{20}, 8\frac{2}{5}$

22. $\frac{31}{7}, \frac{13}{14}, \frac{21}{7}$

23. $1\frac{2}{9}, 1\frac{2}{5}, 1\frac{1}{3}$

24. $4\frac{1}{4}, \frac{38}{8}, 4\frac{1}{2}$

Problem Solving

25. Recipe A calls for $\frac{2}{3}$ c cornmeal, recipe B calls for $\frac{5}{8}$ c cornmeal, and recipe C calls for $\frac{1}{2}$ c cornmeal. Which recipe uses the most cornmeal?
- _____

Rename Fractions as Decimals

Name _____

Date _____

To rename a mixed number or a fraction as a decimal:

- Separate the whole number and fraction parts.
- Rename the fraction part as a decimal.
- Add the whole number part and the decimal.

$$3\frac{1}{4} = 3 + \frac{1}{4}$$

$$\frac{1}{4} \rightarrow 4 \overline{)0.25}$$

$$3 + 0.25 = 3.25$$

Write each as a decimal.

1. $\frac{1}{2}$

2. $\frac{3}{20}$

3. $\frac{4}{50}$

4. $\frac{6}{8}$

5. $\frac{6}{25}$

6. $\frac{12}{15}$

7. $\frac{3}{4}$

8. $\frac{35}{40}$

9. $2\frac{1}{5}$

10. $19\frac{3}{5}$

11. $8\frac{2}{25}$

12. $22\frac{3}{20}$

13. $15\frac{1}{8}$

14. $30\frac{12}{50}$

15. $61\frac{3}{10}$

16. $10\frac{86}{100}$

Write each fraction or mixed number as a decimal. It may help you to rename the fractions as equivalent fractions with denominators that are powers of ten.

17. $\frac{6}{25}$

18. $\frac{45}{50}$

19. $\frac{14}{20}$

20. $1\frac{2}{5}$

21. $9\frac{17}{50}$

22. $3\frac{7}{25}$

23. $7\frac{7}{50}$

24. $34\frac{9}{20}$

Problem Solving

25. Lavonne has six and seven twentieths dollars. How much money does she have?

26. Julio has six twelfths of a dollar. How much money does he have?

name Decimals Fractions

Name _____

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Write 0.44 as a fraction in simplest form.

- Read the given decimal.
- Determine the denominator of the fraction.
- Write an equivalent fraction.
- Simplify if necessary.

0.44 → forty-four hundredths
 The denominator is 100.
 forty-four hundredths = $\frac{44}{100}$
 $\frac{44}{100} = \frac{11}{25}$
 So 0.44 = $\frac{11}{25}$.

complete.

1. $0.8 = \frac{8}{10} = \frac{4}{5}$

2. $0.24 = \frac{24}{100} = \frac{6}{25}$

3. $0.009 = \frac{9}{1000}$

4. $3.25 = 3\frac{25}{100} = 3\frac{1}{4}$

5. $8.063 = 8\frac{63}{1000}$

6. $6.875 = 6\frac{875}{1000}$

Write each decimal as a fraction in simplest form.

7. 0.3 _____ 8. 0.17 _____ 9. 0.009 _____ 10. 0.387 _____
 11. 0.125 _____ 12. 0.0123 _____ 13. 0.62 _____ 14. 0.046 _____
 15. 0.4 _____ 16. 0.12 _____ 17. 0.275 _____ 18. 0.0025 _____
 19. 0.099 _____ 20. 0.5 _____ 21. 0.48 _____ 22. 0.0125 _____

Write each decimal as a mixed number in simplest form.

23. 5.04 _____ 24. 9.12 _____ 25. 8.133 _____
 26. 6.01 _____ 27. 7.625 _____ 28. 2.25 _____
 29. 1.325 _____ 30. 10.6 _____ 31. 3.08 _____
 32. 2.0004 _____ 33. 5.0125 _____ 34. 9.42 _____

35. The newborn baby weighed 3.2 kilograms. _____

36. The newborn calf weighed 74.25 pounds. _____

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Terminating and Repeating Decimals

Name _____

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Terminating Decimals

$$\frac{1}{4} \rightarrow \begin{array}{r} 0.25 \\ 4 \overline{)1.00} \end{array}$$

$$\frac{5}{16} \rightarrow \begin{array}{r} 0.3125 \\ 16 \overline{)5.0000} \end{array}$$

Repeating Decimals

$$\frac{1}{6} \rightarrow \begin{array}{r} 0.16666 \dots \\ 6 \overline{)1.00000} \end{array} \rightarrow 0.1\overline{6}$$

$$\frac{3}{11} \rightarrow \begin{array}{r} 0.272727 \dots \\ 11 \overline{)3.000000} \end{array} \rightarrow 0.\overline{27}$$

Rewrite each repeating decimal with a bar over the part that repeats.

1. 0.12121 ... _____ 2. 0.63636 ... _____ 3. 0.1818 ... _____

4. 2.54545 ... _____ 5. 5.3888 ... _____ 6. 1.2666 ... _____

Write each repeating decimal showing eight decimal places.

7. $0.\overline{6}$ _____ 8. $0.\overline{27}$ _____ 9. $0.\overline{3125}$ _____

10. $4.0\overline{9}$ _____ 11. $7.\overline{83}$ _____ 12. $11.\overline{545}$ _____

13. $6.\overline{16}$ _____ 14. $9.\overline{1}$ _____ 15. $2.08\overline{3}$ _____

Rename each as a terminating or repeating decimal.

16. $\frac{4}{5}$ _____ 17. $\frac{2}{3}$ _____ 18. $\frac{9}{11}$ _____ 19. $\frac{7}{20}$ _____

20. $\frac{7}{18}$ _____ 21. $\frac{1}{18}$ _____ 22. $\frac{5}{8}$ _____ 23. $\frac{7}{12}$ _____

24. $2\frac{1}{3}$ _____ 25. $5\frac{1}{8}$ _____ 26. $9\frac{1}{2}$ _____ 27. $8\frac{5}{18}$ _____

28. $28\frac{1}{25}$ _____ 29. $35\frac{2}{9}$ _____ 30. $64\frac{7}{12}$ _____ 31. $58\frac{9}{11}$ _____

Rational Numbers

Name _____

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A rational number is a number that can be written in the form of a fraction $\frac{a}{b}$, where a and b are integers and $b \neq 0$.

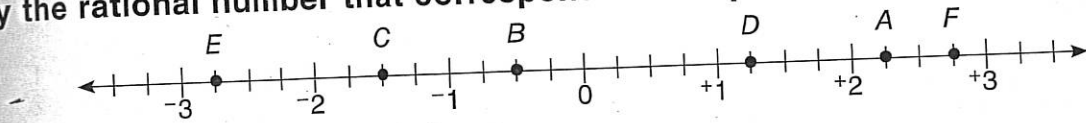
All whole numbers are integers.
All integers are rational numbers.

The numbers $-1\frac{1}{2}$ and $+6\frac{1}{4}$ are rational numbers.

Positive and negative decimals, such as -3.75 and $+8.5$, are rational numbers. Zero is also a rational number.

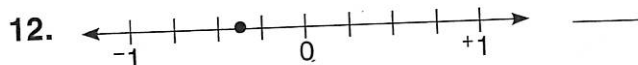
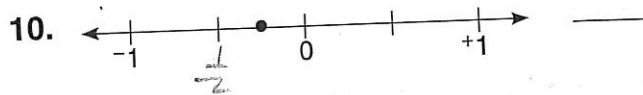
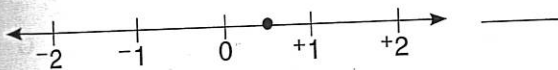
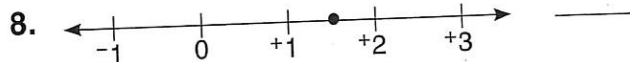
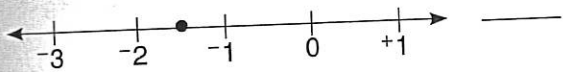
Every rational number has an opposite.
 $-1\frac{1}{2}$ and $+1\frac{1}{2}$ are opposites.
 $+0.25$ and -0.25 are opposites.

Identify the rational number that corresponds to the point on the number line.



1. B _____ 2. A _____ 3. C _____ 4. F _____ 5. D _____ 6. E _____

Write a rational number for each point.



Write each rational number.

9. Express $-5\frac{1}{4}$ as a decimal. _____

14. Express -1.75 as a fraction. _____

Write the opposite of each.

10. $+1\frac{1}{4}$ _____

16. -8.5 _____

17. $+13$ _____

18. $+0.5$ _____

Problem Solving

19. At the close of the stock market on Friday, the price of a stock dropped 3.75 points. Express this loss as a rational number in two ways.

20. When Aaron was sick, his temperature went from 98.6° to 100.1° , a rise of 1.5° . Express this rise in temperature as a rational number in two ways.

Compare and Order Rational Numbers

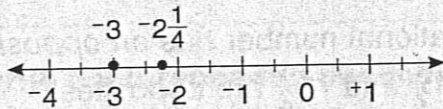
Name _____

Date _____

Compare rational numbers

Compare: -3 and $-2\frac{1}{4}$

Use a number line. The number farther to the right is the greater number.



$-2\frac{1}{4}$ is farther to the right.

So $-3 < -2\frac{1}{4}$.

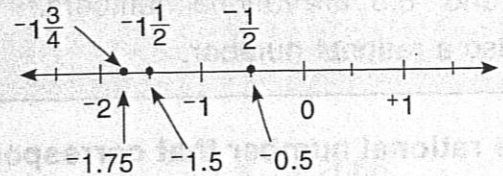
Order rational numbers

Order from least to greatest: -1.5 , $-1\frac{3}{4}$, $-\frac{1}{2}$

Write all the numbers as either decimals or fractions. Then use a number line.

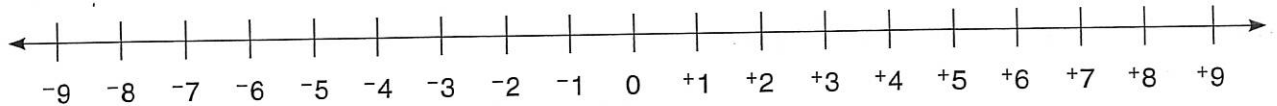
The numbers as fractions: $-\frac{1}{2}$, $-1\frac{3}{4}$, $-\frac{1}{2}$

The numbers as decimals: -1.5 , -1.75 , -0.5



From least to greatest: $-1\frac{3}{4}$, -1.5 , $-\frac{1}{2}$

Compare. Write $<$, $=$, or $>$. Use the number line.



1. $-6\frac{1}{4}$ _____ $+3\frac{1}{2}$ 2. $-9\frac{1}{4}$ _____ $-1\frac{3}{4}$ 3. 0 _____ -3.5 4. -1.75 _____ -1
 5. $-6\frac{1}{4}$ _____ -6.25 6. $-3\frac{1}{4}$ _____ -1.25 7. -3.5 _____ $+3\frac{3}{4}$ 8. $+0.5$ _____ 0

Write in order from least to greatest. Use the number line above to help you.

9. $-5\frac{1}{5}$, 0 , $-5\frac{1}{2}$ 10. -9.7 , -1.4 , $+1.4$ 11. $-5\frac{1}{2}$, $+2.5$, $-2\frac{1}{2}$

12. $+1\frac{1}{3}$, $+1\frac{1}{2}$, -6 13. $-8\frac{1}{5}$, $-\frac{1}{2}$, 0 14. $+6\frac{1}{4}$, 0 , $+6.75$

Problem Solving

15. Over a 5-day period, a share of stock showed these changes:

$-2\frac{1}{4}$, $+1$, $-\frac{1}{2}$, $+2\frac{1}{2}$, and -1

What was the greatest gain? What was the greatest loss?

16. Over a 5-day period, the temperature in degrees Celsius were as follows:

-3° , -3.5° , -2.75° , -1° , and -1.25°

What was the warmest temperature? the coldest temperature?
