

ORDERING RATIONAL NUMBERS

What Is Ordering Rational Numbers?

- A rational number is any number that can be written as a ratio of two integers. The term “rational” comes from the word “ratio.”
- A number is rational if we can write it as a fraction and the numerator and denominator are both integers (whole numbers).
- Every integer is a rational number, since each integer can be written as $n/1$.
- The order of rational numbers depends on their relationship to each other and their position on a number line in terms of their value.



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How to order

- Begin by ordering the positive whole numbers from least (smallest) to greatest (largest).

For example, the numbers 14, 5, 60, 34 and 25 would be ordered

5, 14, 25, 34, 60.

- Next, order the negative numbers least to greatest, remembering the larger the integer the smaller it is (further from zero).

So, the correct order for -40, -46, -77, -12, -3 and -100 would be:

-100, -77, -46, -40, -12, -3

- Fractions are rational numbers that fall between 0 and 1. For example, $\frac{1}{2}$ and $\frac{1}{4}$ are less than one and more than zero. When ordering fractions, compare them by calculating equivalent fractions. This will help in the ordering process. Decide which fraction is least by comparing the numerators of fractions with like denominators:

$$\frac{4}{9} < \frac{7}{9}$$

$$\frac{11}{15} < \frac{14}{15}$$

$$\frac{8}{21} < \frac{19}{21}$$

- Ordering rational numbers requires an understanding of how a number line is set up. The negative numbers appear to be going down towards zero, while the positive numbers increase as they move away from zero. How would you order these numbers?



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- Separate order: _____ s and then _____

- Order fractions by calculating equivalent fractions if necessary. Ordering can not be based simply on the denominators.

$$\frac{5}{32} \quad \frac{1}{4} \quad \frac{5}{8} \quad \frac{11}{16} \quad \frac{11}{12}$$

- Order a mixture of whole numbers and fractions by remembering that proper fractions are all less than one and greater than zero. Calculating equivalent fractions if necessary. Ordering can not be based simply on the denominators.

$$-20 \quad -4 \quad 0 \quad \frac{1}{4} \quad \frac{5}{8} \quad 3 \quad 25 \quad 56$$

Try This!

Put these rational numbers in the correct order:

24 -21 14 -5 -13 7 -8

6 39 -50 -32 35 -5 -6

4 -6 -12 76 -56 -25 42

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8 $\frac{2}{3}$ 17 $\frac{1}{6}$ 1 $\frac{3}{8}$ 20



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