Rational Numbers

Rational Numbers are defined as numbers that can be written as a quotient of two integers in the form $\frac{a}{b}$, where b is any value except 0.

Rational Numbers are written as whole numbers, integers, decimals that terminate or repeat, and fractions. Since there are so many ways to express rational numbers, different forms often appear in a word problem.

To solve word problems involving rational numbers, first change the numbers into the same format. For example, convert all the numbers to decimals, or convert them all to fractions. Once the numbers are converted to the same format they can placed in order and compared.

Example

$2\ \frac{3}{4}\ ,\ 3\ ,\ \frac{45}{12}\ ,4\ ,0\ ,\ \frac{1}{2}\ ,1\ ,1.25\ ,2$

Order the given rational numbers on a number line.

Solution

Step 1
Change the fractions to decimals.

$\frac{1}{2}\ =\ 0.5$
$2\ \frac{3}{4}\ =\ 2.75$
$\frac{45}{12}\ =\ 3.75$

Step 2
Arrange the numbers from lowest to highest.
0, 0.5, 1, 1.25, 2, 2.75, 3, 3.75, 4

Step 3
Arrange the numbers on a number line. Change the decimals back to fractions as in the original list.