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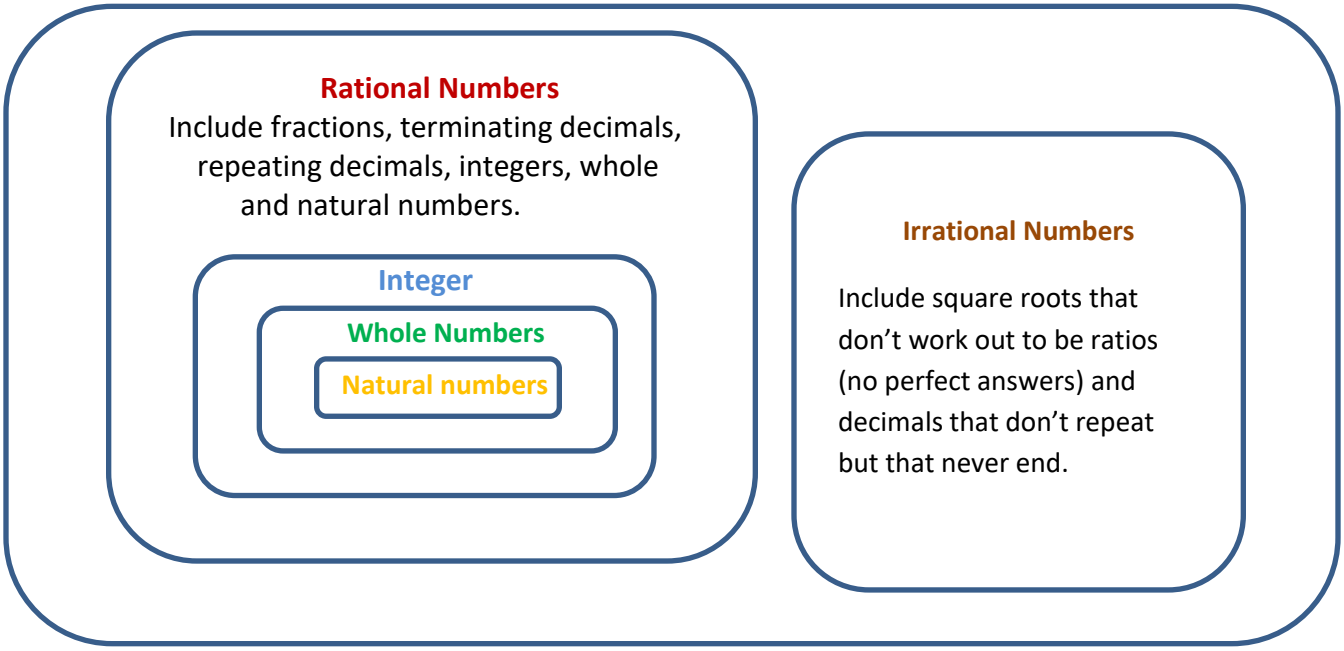
Rational Numbers Guide Notes

Math 8

A rational number is a number that can be in the form $\frac{p}{q}$ where p and q are integers and $q \neq 0$.

A rational number can be made by dividing two integers, or it is a number that can be written as the ratio of two integers.



Sample Problem 1: **Identify each number as rational or irrational.**

a.

$\frac{-2}{4}$	Rational
$12.1\overline{7}$	Rational
$\sqrt{36}$	Rational
$\sqrt{32}$	Irrational

b.

$\frac{18}{6}$	Rational
$\pi = 3.141591 \ldots \ldots \ldots$	Irrational
$\sqrt{121}$	Rational
$\sqrt{56}$	Irrational

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Sample Problem 2: **Write the numbers in order from least to greatest.**

a. $\frac{1}{2}, \frac{2}{3}, \frac{2}{6}, \frac{-5}{6}$

$\frac{-5}{6} < \frac{2}{6} < \frac{1}{2} < \frac{2}{3}$

b. $-2.1, \quad -2.13, \quad -2.2, \quad -2.123$

$-2.2 < -2.13 < -2.123 < -2.1$

c. $\frac{2}{3}, \frac{-1}{6}, \frac{5}{6}, \frac{-1}{2}$

$\frac{-1}{2} < \frac{-1}{6} < \frac{2}{3} < \frac{5}{6}$

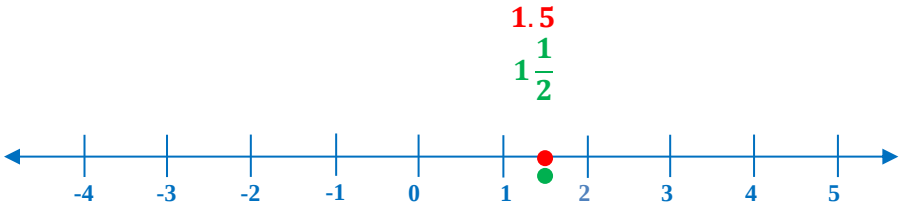
d. $4.1, \quad -4.1, \quad -3.50, \quad 3.5$

$-4.1 < -3.50 < 3.5 < 4.1$

Sample problem 3: **Graph each pair of numbers on the number line. Use the graph and write $<, or > or =$ to compare the numbers.**

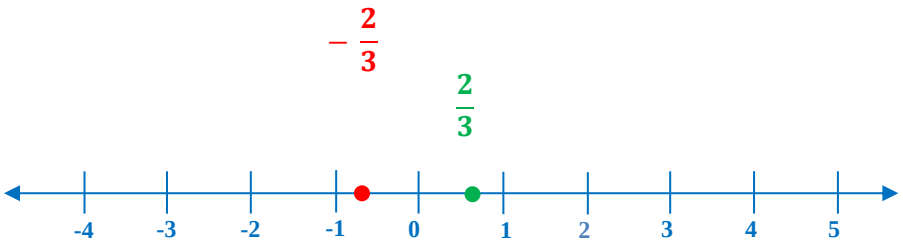
a.

$1.5 \; (=) \; 1\frac{1}{2}$



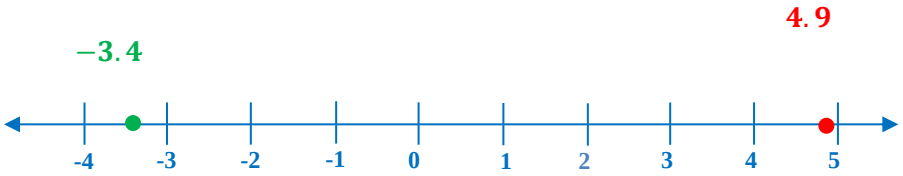
b.

$-\frac{2}{3} \; (<) \; \frac{2}{3}$



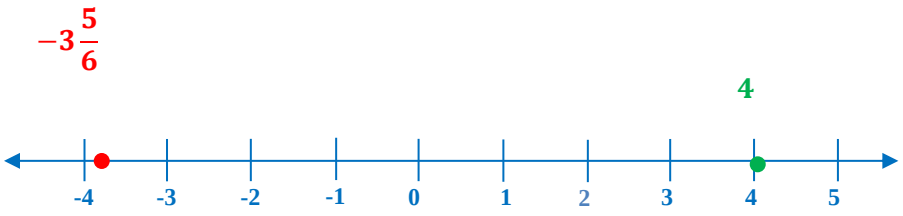
c.

$4.9 \; (>) \; -3.4$



d.

$-3\frac{5}{6} \; (<) \; 4$



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Rational Numbers Guide Notes **Math 8**

Sample Problem 4: **Identify each decimal as repeating or terminating.**

a.

-0.5	terminating decimal
1.6666	repeating decimal
$2.\overline{3}$	repeating decimal
14.05	terminating decimal

b.

$-0.131313..$	repeating decimal
1.65	terminating decimal
$2.\overline{21}$	repeating decimal
-4.12	terminating decimal