

Lesson 2.1c

Comparing Rational Numbers

EQ: How do we COMPARE rational numbers?

COMPARING DECIMALS

We can use this method to see which decimals are bigger:

- Using the Decimal Comparison Paper, write each decimal number being compared with the **decimal point in the same place** for each.
- Fill in **empty squares with zeros**.
- Compare the numbers, beginning with the **first column** on the left, one column at a time.
- If the digits being compared are equal, move to the **next column** to the right until one number is greater.
- The first decimal number with a GREATER digit is the GREATER decimal number.

Example 1

Compare 1.56 and 1.506

0	0	1	.	5	6	0
0	0	1	.	5	0	6

Therefore,

$$1.56 > 1.506$$

Example 2

Compare 145.89 and 145.889

1	4	5	.	8	9	0
1	4	5	.	8	8	9

Therefore,

$$145.89 > 145.889$$

2.1c cont'd COMPARING FRACTIONS

IF fractions have the SAME denominator (bottom number):

- COMPARE the numerators. (Top Number)
- The Fraction with the GREATER NUMERATOR (top number) is the GREATER fraction.

Example 1

Compare $\frac{5}{9}$ and $\frac{7}{9}$

7 is greater than 5

Therefore, $\frac{5}{9} < \frac{7}{9}$

Example 2

Compare $\frac{35}{100}$ and $\frac{18}{100}$

35 is greater than 18

Therefore, $\frac{35}{100} > \frac{18}{100}$

IF fractions have DIFFERENT denominators (bottom number):

- Turn the fractions into DECIMALS by dividing the NUMERATOR (top) by the DENOMINATOR (bottom).
- Compare as DECIMALS (see comparing decimals notes).

Example 1

Compare $\frac{3}{8}$ and $\frac{2}{5}$

$$\begin{array}{r} 8 \overline{) 3.000} \\ \underline{24} \\ 560 \\ \underline{560} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

0	0	0	.	3	7	5
0	0	0	.	4	0	0

.4 is greater than .375

Therefore, $\frac{3}{8} < \frac{2}{5}$

Example 2

Compare $1\frac{2}{10}$ and $1\frac{3}{4}$

$$\begin{array}{r} 10 \overline{) 2.0} \\ \underline{20} \\ 0 \end{array}$$

0	0	1	.	2	0	0
0	0	1	.	7	5	0

1.75 is greater than 1.2

Therefore, $1\frac{2}{10} < 1\frac{3}{4}$