

# 5-5 Compare & Order Rational Numbers

## Review

### Convert Decimals to Fractions:

1. Identify the place value of the LAST decimal place.
2. Write decimal as a fraction using the place value as the denominator
3. Simplify (Use cake method)

### Examples:

$$0.\underline{5} \quad \frac{5}{10} \quad \begin{array}{r} 5 \overline{) 5 \ 10} \\ \underline{5 \ 10} \\ 0 \end{array} \quad \frac{1}{2}$$

$\left(\frac{1}{2}\right)$

$$0.\underline{84} \quad \frac{84}{100} \quad \begin{array}{r} 2 \overline{) 84 \ 100} \\ \underline{42 \ 50} \\ 21 \ 25 \end{array} \quad \frac{21}{25}$$

$\left(\frac{21}{25}\right)$

$$25.\underline{5} \quad \frac{5}{10} \quad \begin{array}{r} 5 \overline{) 5 \ 10} \\ \underline{5 \ 10} \\ 0 \end{array} \quad 25\frac{1}{2}$$

$\left(25\frac{1}{2}\right)$

### Convert Fractions to Decimals:

1. Check to see if the denominator is a factor of 10, 100, or 1,000.
2. If so → write equivalent fractions with one of these denominators
3. If not → divide the numerator by the denominator

### Examples:

$$\frac{23}{100}$$

$\left(0.23\right)$

$$\frac{5}{20}$$

$\xrightarrow{\times 5} \frac{5}{20} = \frac{25}{100} \xrightarrow{\times 5} \left(0.25\right)$

$$\frac{5}{6}$$

$\left(0.\overline{83}\right)$

$$\begin{array}{r} \times .833 \\ 6 \overline{) 5.000} \\ \underline{-48} \downarrow \\ 20 \downarrow \\ \underline{-18} \downarrow \\ 20 \end{array}$$

## Compare & Order Rational Numbers

If all numbers are the same sign then compare them as normal.

If the signs are different (+ & -) then the positive number is bigger.

Examples:

$$2\frac{2}{3} \otimes \frac{5}{4}$$

$$-1 \otimes -1\frac{1}{6}$$

$$-4.25 \otimes -4.22$$

$$2.5 \otimes 0.8$$

Order the numbers from least to greatest.

(-3.1, -3.25,  $\frac{5}{20}$ )

$$\begin{array}{c} 0.25 \\ \frac{5}{20} = \frac{25}{100} \\ \quad \quad \quad \nearrow \\ \quad \quad \quad \times 5 \end{array}$$

$\otimes$  (-3.25, -3.1, 0.25)

## 5-5 Compare & Order Rational Numbers

### Steps:

1. Convert all numbers to be either all fractions or all decimals.  
(see 5-5 Day 1 notes)
2. Compare and/or order the numbers making sure to include all negative signs.

### Examples:

$$-8.11 \bullet -8\frac{8}{100}$$

$$-8.11 \text{ (L)} -8.08$$

$$-15.26 \bullet -15\frac{13}{50}$$

$$-15.26 \text{ (=)} -15.26$$

$$\frac{13}{50} \xrightarrow{\times 2} \frac{26}{100}$$

$\{-5.42, 5\frac{5}{6}, 5.34, -5\frac{4}{5}\}$  Least to greatest

$$\{-5.42, 5.8\bar{3}, 5.34, -5.8\bar{3}\}$$

$$\text{(-5.8, -5.42, 5.34, 5.8\bar{3})}$$

$$\frac{4}{5} \xrightarrow{\times 20} \frac{80}{100}$$

$$\begin{array}{r} 6 \overline{) 5.000} \\ \underline{-48} \phantom{0} \\ 20 \\ \underline{-18} \phantom{0} \\ 20 \end{array}$$

$\{-7.\bar{3}, 7\frac{3}{4}, 7.23, -7\frac{2}{3}\}$  Greatest to least

$$\{7.75, 7.23, -7.\bar{3}, -7.\bar{6}\}$$

$$\text{(7.75, 7.23, -7.\bar{3}, -7.\bar{6})}$$

$$\frac{3}{4} \xrightarrow{\times 25} \frac{75}{100}$$

$$\begin{array}{r} 3 \overline{) 2.00} \\ \underline{-18} \phantom{0} \\ 20 \end{array}$$