

# Unit 3.2

## COMPARING AND ORDERING FRACTIONS AND DECIMALS

### LET'S REVIEW

- TO USE BENCHMARKS MEANS TO "APPROXIMATE"

↳ USE  $0, \frac{1}{2} (0.5), 1$

- WHEN DEALING WITH MIXED NUMBERS

ALWAYS CONVERT THEM INTO IMPROPER FRACTIONS

$$3 \frac{2}{7} = \frac{(3 \times 7) + 2}{7} = \frac{23}{7}$$

STAYS the same

$$4 \frac{5}{3} = \frac{(3 \times 4) + 5}{3} = \frac{17}{3}$$

STAYS the same

- TO COMPARE, EITHER
  - CONVERT ALL NUMBERS TO DECIMALS  
(convert fractions to decimals by dividing numerators by denominator)
  - OR
  - CONVERT ALL DECIMALS AND MIXED NUMBERS TO FRACTIONS.

# LET'S COMPARE FRACTIONS

$$\begin{array}{cccc} \frac{3}{4} & \frac{2}{4} & \frac{6}{4} & \frac{7}{4} \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 0.75 & 0.5 & 1.5 & 1.75 \end{array}$$

IN ORDER FROM LEAST TO GREATEST

$$0.5 < 0.75 < 1.5 < 1.75$$

OR

$$\frac{2}{4} < \frac{3}{4} < \frac{6}{4} < \frac{7}{4}$$

So: FOR FRACTIONS WITH THE SAME DENOMINATOR  
THE GREATER THE NUMERATOR THE GREATER  
THE FRACTION

## IF FRACTIONS HAVE DIFFERENT DENOMINATORS

- MAKE ALL DENOMINATORS EQUAL

↳ FIND A NUMBER TO MULTIPLY THE DENOMINATOR  
(AND THUS MAKING IT AN EQUAL DENOMINATOR)

↳ WHATEVER YOU DO TO THE TOP  
YOU DO TO YOUR BOTTOM

Examples:

$$\frac{7}{8} \text{ and } \frac{3}{4} \rightarrow \frac{3 \times 2}{4 \times 2} \rightarrow \frac{6}{8}$$

same denominator!

$$\frac{15}{10} \text{ and } \frac{11}{5} \rightarrow \frac{11 \times 2}{5 \times 2} \rightarrow \frac{22}{10}$$

same denominator! —!

NOW THAT WE HAVE THE BASICS

WE CAN COMPARE

Example on Page 92:

a) write these numbers in ORDER FROM LEAST TO GREATEST:

$$\frac{7}{8}, \frac{9}{8}, 1\frac{1}{4}, 0.75$$

STRATEGY 1: CONVERT ALL NUMBERS INTO DECIMALS!

$$\frac{7}{8} = 0.875$$

$$\frac{9}{8} = 1.125$$

1.125 and 1.25

$$1\frac{1}{4} = \frac{(4 \times 1) + 1}{4} = \frac{5}{4} = 1.25$$

1 comes before 2  
So, 1.125 is bigger

0.75

SO, FROM LEAST TO GREATEST

$$0.75 < 0.875 < 1.125 < 1.25$$

OR

$$0.75, \frac{7}{8}, \frac{9}{8}, \frac{5}{4}$$

or  $\frac{1}{4}$

NOTE

$\frac{5}{4}$  can be converted to:

$$\frac{5 \times 2}{4 \times 2} = \frac{10}{8} \quad 7 < 9 < 10$$

there you go!

↳ to compare, should  
All numbers be in the same format!