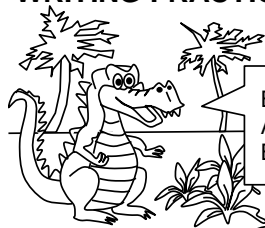


# COMPARING MORE THAN TWO FRACTIONS

## WRITING FRACTIONS FROM LEAST TO GREATEST



BEFORE YOU START THIS HANDOUT YOU SHOULD KNOW HOW TO COMPARE TWO FRACTIONS AND FIND THEIR COMMON DENOMINATORS. COMPARING MORE THAN TWO FRACTIONS IS HARDER BUT WE WILL SHOW YOU SOME TRICKS TO MAKE IT A LITTLE EASIER. LET'S GET STARTED.



THE FIRST THING YOU NEED TO UNDERSTAND IS WHAT IS ONE-HALF AND WHETHER OR NOT A FRACTION IS GREATER OR LESS THAN ONE-HALF.

$\frac{1}{2}$  IS THE MIDDLE POINT OR WHERE SOMETHING IS SPLIT INTO TWO EQUAL PIECES.

TO FIND HALF OF A NUMBER JUST DIVIDE IT BY TWO.

2	→	1	1 IS HALF OF 2,
4	→	2	2 IS HALF OF 4,
5	→	2.5	2.5 IS HALF OF 5,
9	→	4.5	4.5 IS HALF OF 9.

DIVIDE BY 2

$\frac{1}{2}$	$=$	$\frac{2}{4}$	$=$	$\frac{3}{6}$	$=$	$\frac{4}{8}$	$=$	$\frac{5}{10}$	$=$	$\frac{6}{12}$	$=$	$\frac{7}{14}$	$=$	$\frac{8}{16}$	$=$	$\frac{9}{18}$	$=$	$\frac{10}{20}$
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ALL OF THESE FRACTIONS EQUAL ONE-HALF



LET'S USE THIS INFORMATION TO HELP US ESTIMATE THE SIZE OF A FRACTION.

Determine the half way point of each fraction and write if the original fraction is greater, smaller, or equal.

### HELPFUL EXAMPLES

A.  $\frac{7}{8}$  → Divide 8 by 2 → 4 →  $\frac{4}{8}$  The half way point, equals one-half.  $\frac{7}{8}$  is greater than  $\frac{4}{8}$

If we were comparing other fractions to  $\frac{7}{8}$  we now know it is one of the **larger** fractions in the group.

B.  $\frac{8}{19}$  → Divide 19 by 2 → 9.5 →  $\frac{9.5}{19}$  The half way point, equals one-half.  $\frac{8}{19}$  is smaller than  $\frac{9.5}{19}$

If we were comparing other fractions to  $\frac{8}{19}$  we now know it is one of the **smaller** fractions in the group.

Did you notice that  $\frac{8}{19}$  is very close to  $\frac{9.5}{19}$ ? This means it is almost in the middle.

Now your turn. Determine the half way point and write if the original fraction is greater, smaller, or equal.

1.  $\frac{5}{12}$       2.  $\frac{8}{21}$       3.  $\frac{9}{10}$       4.  $\frac{4}{7}$       5.  $\frac{13}{26}$

$\frac{6}{12}$  SMALLER       $\frac{10.5}{21}$  SMALLER       $\frac{5}{10}$  GREATER       $\frac{3.5}{7}$  GREATER       $\frac{13}{26}$  EQUAL

6.  $\frac{18}{31}$       7.  $\frac{2}{5}$       8.  $\frac{19}{38}$       9.  $\frac{11}{20}$       10.  $\frac{7}{19}$

$\frac{15.5}{31}$  GREATER       $\frac{2.5}{5}$  SMALLER       $\frac{19}{38}$  EQUAL       $\frac{10}{20}$  GREATER       $\frac{9.5}{19}$  SMALLER

# COMPARING MORE THAN TWO FRACTIONS

## WRITING FRACTIONS FROM LEAST TO GREATEST

**HELPFUL EXAMPLE**

A.  $\frac{3}{4}, \frac{1}{7}, \frac{2}{5}$

Find one-half

$$\frac{3}{4} \rightarrow \frac{2}{4}$$

$$\frac{1}{7} \rightarrow \frac{3.5}{7}$$

$$\frac{2}{5} \rightarrow \frac{2.5}{5}$$

NOW THIS MIGHT SEEM LIKE A SIMPLE IDEA, BUT IT IS VERY HELPFUL. ON THIS PAGE YOU ARE GOING TO COMPARE FRACTIONS AND PUT THEM IN ORDER FROM LEAST TO GREATEST. USE THE ONE-HALF TECHNIQUE TO SAVE SOME TIME.

$\frac{3}{4}$  Is greater than half

$\frac{1}{7}$  Is less than half

$\frac{2}{5}$  Is less than half

NOW WE KNOW THREE-FOURTHS IS THE LARGEST, BECAUSE IT IS THE ONLY ONE GREATER THAN ONE-HALF, AND ONE-SEVENTH IS THE SMALLEST BECAUSE IT IS THE FARTHEST AWAY FROM ONE-HALF, AND TWO-FIFTHS IS VERY CLOSE TO ONE-HALF SO IT IS IN THE MIDDLE.

ANSWER:  $\frac{1}{7}, \frac{2}{5}, \frac{3}{4}$

LEAST TO GREATEST

And we did this without finding a common denominator!

Now your turn. Write the fractions in order from least to greatest.

1.  $\frac{3}{19}, \frac{1}{6}, \frac{6}{11}$   
 $\frac{3}{19}, \frac{1}{6}, \frac{6}{11}$

2.  $\frac{2}{3}, \frac{3}{8}, \frac{5}{6}$   
 $\frac{3}{8}, \frac{2}{3}, \frac{5}{6}$

3.  $\frac{2}{4}, \frac{7}{11}, \frac{3}{13}$   
 $\frac{3}{13}, \frac{2}{4}, \frac{7}{11}$

4.  $\frac{1}{3}, \frac{4}{15}, \frac{9}{18}$   
 $\frac{4}{15}, \frac{1}{3}, \frac{9}{18}$

5.  $\frac{8}{9}, \frac{7}{13}, \frac{2}{11}$   
 $\frac{2}{11}, \frac{7}{13}, \frac{8}{9}$

6.  $\frac{7}{9}, \frac{8}{17}, \frac{2}{5}$   
 $\frac{2}{5}, \frac{8}{17}, \frac{7}{9}$

7.  $\frac{1}{16}, \frac{6}{11}, \frac{3}{8}$   
 $\frac{1}{16}, \frac{3}{8}, \frac{6}{11}$

8.  $\frac{9}{13}, \frac{5}{10}, \frac{3}{7}$   
 $\frac{3}{7}, \frac{5}{10}, \frac{9}{13}$

9.  $\frac{11}{21}, \frac{9}{14}, \frac{1}{3}$   
 $\frac{1}{3}, \frac{11}{21}, \frac{9}{14}$

Use your knowledge of one-half to separate the fractions into two groups, and write the fractions in order from least to greatest.

10.  $\frac{3}{4}, \frac{2}{11}, \frac{1}{5}, \frac{5}{8}$

11.  $\frac{8}{15}, \frac{2}{3}, \frac{4}{9}, \frac{2}{5}$

12.  $\frac{3}{17}, \frac{8}{13}, \frac{1}{10}, \frac{3}{5}$

YOU DO NOT HAVE TO COMPARE ALL THE FRACTIONS TOGETHER. INSTEAD, ONLY COMPARE THE TWO LARGER FRACTIONS AND THEN COMPARE THE TWO SMALLER FRACTIONS.

$\frac{3}{4}$ AND $\frac{5}{8}$	Fractions greater than one-half
$\frac{2}{11}$ AND $\frac{1}{5}$	Fractions less than one-half

$\frac{2}{11}, \frac{1}{5}, \frac{5}{8}, \frac{3}{4}$

$\frac{2}{5}, \frac{4}{9}, \frac{8}{15}, \frac{2}{3}$

$\frac{1}{10}, \frac{3}{17}, \frac{3}{5}, \frac{8}{13}$