

The Order Relation Between Two Fractions

Which is larger $\frac{2}{3}$ or $\frac{1}{2}$?



$\frac{2}{3}$



$\frac{1}{2}$

It is easy to tell which fraction is larger when they have the same denominator.

1. To do this, find the LCM of the denominators.
2. Then write equivalent fractions with the LCM as the denominator of each fraction.
3. The fraction with the greater numerator is the greater fraction (when both denominators are the same.)

$$\frac{2}{3} = \frac{4}{6}$$

$$\frac{1}{2} = \frac{3}{6}$$

$$\frac{1}{2} = \frac{3}{6}$$

$$\frac{2}{3} = \frac{4}{6}$$

therefore, $\frac{2}{3} > \frac{1}{2}$ REMEMBER $>$ is read "is greater than".

NOTICE how we continue using the skills we learned earlier. The more you use these skills, the easier they will become. STUDY to understand why rules work and WHEN to use them. Then practice using them. By the end of the semester some of the things that give you trouble now will seem very easy to you if you continue to practice them!

EXAMPLE: Place the correct order symbol $<$, $>$ or $=$ to make a true statement.

$$\frac{52}{83} \text{ ? } \frac{52}{83}$$

SOLUTION: Write each fraction with the same denominator.

$$\frac{5}{8} = \frac{15}{24} \quad \text{and} \quad \frac{2}{3} = \frac{16}{24}$$

$$\frac{15}{24} < \frac{16}{24}$$

$$\text{Since } 15 < 16, \frac{15}{24} < \frac{16}{24} \quad \text{and} \quad \frac{5}{8} < \frac{2}{3}$$

EXAMPLE: Place the correct order symbol $<$, $>$ or $=$ to make a true statement.

$$\frac{6}{18} \quad \frac{9}{27}$$

a. $18 = 2 \times 3 \times 3$ $27 = 3 \times 3 \times 3$
 LCM = $2 \times 3 \times 3 \times 3 = 54$

b. $\frac{6}{18} \cdot \frac{3}{3} = \frac{18}{54}$ $\frac{9}{27} \cdot \frac{2}{2} = \frac{18}{54}$

c. therefore, $\frac{6}{18} = \frac{9}{27}$

1. - 8. Use the order symbol correctly ($<$, $>$ or $=$):

1. $\frac{3}{8} < \frac{1}{2}$

2. $\frac{5}{6} > \frac{7}{9}$

3. $\frac{3}{4} < \frac{35}{89} < \frac{2}{5}$

4. $\frac{3}{4} > \frac{2}{5}$

5. $\frac{7}{3} > \frac{3}{7}$

6. $\frac{12}{25} < \frac{7}{15}$

7. $\frac{616}{15} > \frac{13}{40}$

8. $\frac{24}{22} > \frac{7}{33}$

ANSWERS :

1. <

2. >

3. >

4. >

5. > (Isn't this obvious without getting the LCD?)

6. >7. =

8. <