



SKILL 16: Comparing and Ordering Fractions and Mixed Numbers

When ordering mixed numbers, first order using the whole number part. However, sometimes it is necessary to compare or order fractions. One way to do this is to write each fraction with a common denominator.

Example 1

Compare $\frac{3}{4}$ and $\frac{5}{6}$.

To compare the fractions, write them with a common denominator.

Multiples of 4: 4, 8, **12**, 16

Multiples of 6: 6, **12**, 18, 24

$$\begin{array}{ccc} \frac{3}{4} & & \frac{5}{6} \\ \downarrow & & \downarrow \\ \rightarrow \frac{9}{12} & < & \frac{10}{12} \leftarrow \end{array}$$

Since the denominators are the same, compare the numerators.

The least common denominator of 4 and 6 is 12. Using the LCD, write equivalent fractions.

$$9 < 10, \text{ so } \frac{3}{4} < \frac{5}{6}.$$

Example 2

Write the mixed numbers $2\frac{5}{8}$, $2\frac{3}{4}$, and $2\frac{7}{10}$ in order from least to greatest.

Multiples of 8: 8, 16, 24, 32, **40**

Multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40

Multiples of 10: 10, 20, 30, **40**

$$\begin{array}{ccc} \frac{5}{8} & \frac{3}{4} & \frac{7}{10} \\ \downarrow & \downarrow & \downarrow \\ \frac{25}{40} & \frac{30}{40} & \frac{28}{40} \end{array}$$

The least common denominator for 8, 4, and 10 is 40. Write equivalent fractions.

$$25 < 28 < 30, \text{ so the order of the mixed numbers is } 2\frac{5}{8}, 2\frac{7}{10}, 2\frac{3}{4}.$$

Guided Practice

1. Compare $5\frac{1}{4}$ and $5\frac{1}{6}$.

a. What is the least common denominator? _____

b. Write equivalent fractions using the least common denominator. _____

c. Compare. $5\frac{1}{4}$ ○ $5\frac{1}{6}$

2. Order $1\frac{5}{6}$, $1\frac{3}{4}$, and $1\frac{3}{5}$ from least to greatest.

a. Write equivalent fractions using the LCD. _____

b. Order the mixed numbers. _____

SKILL 16: PracticeCompare using $<$, $>$, or $=$.

1. $\frac{3}{12} \bigcirc \frac{5}{12}$

2. $\frac{2}{3} \bigcirc \frac{1}{2}$

3. $\frac{5}{8} \bigcirc \frac{3}{8}$

4. $\frac{4}{5} \bigcirc \frac{9}{10}$

5. $\frac{2}{4} \bigcirc \frac{10}{20}$

6. $\frac{1}{4} \bigcirc \frac{4}{13}$

7. $\frac{5}{7} \bigcirc \frac{6}{7}$

8. $\frac{5}{12} \bigcirc \frac{3}{5}$

9. $4\frac{2}{9} \bigcirc 4\frac{1}{5}$

10. $4\frac{1}{7} \bigcirc 3\frac{3}{18}$

11. $6\frac{3}{7} \bigcirc 6\frac{4}{9}$

12. $8\frac{4}{6} \bigcirc 8\frac{12}{16}$

13. $9\frac{2}{6} \bigcirc 9\frac{4}{12}$

14. $7\frac{2}{5} \bigcirc 6\frac{5}{11}$

Order from least to greatest.

15. $\frac{3}{4}, \frac{3}{5}, \frac{3}{10}$

16. $3\frac{4}{5}, 3\frac{3}{4}, 3\frac{5}{6}$

17. $\frac{7}{10}, \frac{18}{25}, \frac{3}{5}$

18. $5\frac{1}{5}, 5\frac{1}{6}, 4\frac{7}{30}$

19. $\frac{33}{100}, \frac{3}{10}, \frac{33}{1,000}$

20. $\frac{49}{56}, \frac{23}{28}, \frac{12}{14}$

Solve.

21. Raoul has $2\frac{1}{3}$ cups of milk. Does he have enough to prepare a recipe that uses $2\frac{1}{2}$ cups of milk? _____22. Fanelli's Hardware stocks wooden dowels in the following widths: $\frac{3}{16}$ in., $\frac{1}{8}$ in., $\frac{3}{8}$ in., $\frac{1}{4}$ in., $\frac{1}{2}$ in. Write these widths in order from smallest to largest.**TEST PREP**

23. Which comparison is correct?

A $\frac{5}{6} < \frac{3}{5}$

C $\frac{2}{5} > \frac{1}{2}$

B $\frac{5}{6} > \frac{7}{9}$

D $\frac{8}{9} < \frac{4}{5}$

Skill 16

24. Write $\frac{53}{12}$ as a mixed number.

F $4\frac{3}{12}$

H $4\frac{4}{12}$

G $5\frac{5}{12}$

J $4\frac{5}{12}$

Skill 15