LESSON 17

Comparing Fractions

Fractions can be compared when the denominators are the same. If the denominators are different they must be made the same.

Example 1: Compare

$$\frac{3}{7} \qquad \frac{4}{9}$$

Solution: Cross multiply in the direction of the arrows.

$$\overset{27}{\frac{3}{7}} \; < \; \overset{28}{\frac{4}{9}}$$

Write the products above

$$\frac{3}{7} < \frac{4}{9} \quad \text{Since} \quad \frac{27}{63} < \frac{28}{63}$$

Example 2: Compare

$$\frac{4}{5} \qquad \frac{11}{15}$$

Now $\frac{4}{5} = \frac{12}{15}$ $\qquad \frac{4}{5} > \frac{11}{15}$

Since $\frac{12}{15} > \frac{11}{15}$

Compare Each Pair Of Fractions With ">" Greater Than) or "<" Less Than or "="

1. $\frac{20}{9} < \frac{27}{10}$	11. $\frac{56}{7} > \frac{50}{8}$	21. $\frac{32}{4} < \frac{35}{7}$	31. $\frac{21}{3} < \frac{25}{5}$	41. $\frac{24}{3} < \frac{25}{5}$
2. $\frac{45}{5} < \frac{56}{7}$	12. $\frac{20}{2} < \frac{21}{7}$	22. $\frac{18}{2} > \frac{15}{5}$	32. $\frac{21}{3} < \frac{24}{6}$	42. $\frac{7}{1} < \frac{8}{2}$
3. $\frac{80}{8} < \frac{81}{9}$	13. $\frac{50}{5} > \frac{42}{7}$	23. $\frac{24}{3} > \frac{21}{3}$	33. $\frac{9}{1} < \frac{10}{2}$	43. $\frac{70}{7} < \frac{72}{9}$
4. $\frac{14}{2} > \frac{12}{4}$	14. $\frac{54}{6} < \frac{56}{8}$	24. $\frac{15}{3} < \frac{16}{4}$	34. $\frac{45}{5} > \frac{40}{5}$	44. $\frac{30}{3} > \frac{28}{7}$
5. $\frac{30}{3} < \frac{36}{9}$	15. $\frac{36}{3} = \frac{36}{9}$	25. $\frac{8}{1} > \frac{6}{1}$	35. $\frac{48}{6} > \frac{35}{5}$	45. $\frac{24}{3} = \frac{24}{3}$
6. $\frac{27}{3} < \frac{35}{5}$	16. $\frac{27}{3} < \frac{28}{4}$	26. $\frac{27}{3} > \frac{20}{5}$	36. $\frac{36}{4} > \frac{35}{7}$	46. $\frac{30}{3} > \frac{15}{3}$
7. $\frac{45}{5} < \frac{64}{8}$	17. $\frac{24}{4} < \frac{25}{5}$	27. $\frac{14}{2} < \frac{15}{3}$	37. $\frac{18}{2} > \frac{12}{4}$	47. $\frac{63}{7} < \frac{64}{8}$
8. $\frac{7}{1} > \frac{6}{3}$	18. $\frac{14}{2} < \frac{15}{5}$	28. $\frac{18}{2} = \frac{18}{6}$	38. $\frac{32}{4} < \frac{35}{5}$	48. $\frac{45}{5} < \frac{56}{8}$
9. $\frac{80}{5} = \frac{80}{10}$	19. $\frac{15}{3} > \frac{12}{3}$	29. $\frac{45}{5} < \frac{48}{8}$	39. $\frac{36}{4} < \frac{40}{8}$	49. $\frac{12}{2} = \frac{12}{4}$
10. $\frac{3}{1} < \frac{4}{2}$	20. $\frac{9}{1} > \frac{8}{2}$	30. $\frac{16}{2} > \frac{15}{5}$	40. $\frac{35}{5} < \frac{36}{6}$	50. $\frac{28}{4} > \frac{25}{5}$

Compare Each Pair Of Fractions With “>” Greater Than or “<” Less Than or “=”

51. $\frac{3}{5} \quad \frac{7}{10}$ $\frac{6}{10} < \frac{7}{10}$	56. $\frac{7}{12} \quad \frac{1}{2}$ $\frac{7}{12} > \frac{6}{12}$	61. $\frac{1}{3} \quad \frac{11}{30}$ $\frac{10}{30} < \frac{11}{30}$	66. $\frac{3}{24} \quad \frac{7}{48}$ $\frac{6}{48} < \frac{7}{48}$
52. $\frac{3}{4} \quad \frac{8}{12}$ $\frac{9}{12} > \frac{8}{12}$	57. $\frac{9}{15} \quad \frac{2}{3}$ $\frac{9}{15} < \frac{10}{15}$	62. $\frac{5}{24} \quad \frac{1}{6}$ $\frac{5}{24} > \frac{4}{24}$	67. $\frac{15}{36} \quad \frac{29}{72}$ $\frac{30}{72} > \frac{29}{72}$
53. $\frac{7}{10} \quad \frac{4}{5}$ $\frac{7}{10} < \frac{8}{10}$	58. $\frac{11}{20} \quad \frac{3}{5}$ $\frac{11}{20} < \frac{12}{20}$	63. $\frac{17}{30} \quad \frac{3}{5}$ $\frac{17}{30} < \frac{18}{30}$	68. $\frac{3}{50} \quad \frac{2}{25}$ $\frac{3}{50} < \frac{4}{50}$
54. $\frac{5}{8} \quad \frac{3}{4}$ $\frac{5}{8} < \frac{6}{8}$	59. $\frac{7}{30} \quad \frac{3}{10}$ $\frac{7}{30} < \frac{9}{30}$	64. $\frac{4}{25} \quad \frac{1}{5}$ $\frac{4}{25} < \frac{5}{25}$	69. $\frac{1}{12} \quad \frac{3}{36}$ $\frac{3}{36} = \frac{3}{36}$
55. $\frac{3}{7} \quad \frac{5}{14}$ $\frac{6}{14} > \frac{5}{14}$	60. $\frac{5}{35} \quad \frac{1}{7}$ $\frac{5}{35} = \frac{5}{35}$	65. $\frac{9}{11} \quad \frac{17}{22}$ $\frac{18}{22} > \frac{17}{22}$	70. $\frac{4}{15} \quad \frac{17}{60}$ $\frac{16}{60} < \frac{17}{60}$

Order Each Group Of Fractions Smallest To Largest

71. $\frac{4}{15}$ $\frac{1}{3}$ $\frac{1}{5}$
M $\frac{4}{15}$ L $\frac{5}{15}$ S $\frac{3}{15}$
$\frac{1}{5} < \frac{4}{15} < \frac{1}{3}$

72. $\frac{5}{12}$ $\frac{1}{3}$ $\frac{1}{2}$
M $\frac{5}{12}$ S $\frac{4}{12}$ L $\frac{6}{12}$
$\frac{1}{3} < \frac{5}{12} < \frac{1}{2}$

73. $\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{6}$
M $\frac{2}{6}$ L $\frac{3}{6}$ S $\frac{1}{6}$
$\frac{1}{6} < \frac{1}{3} < \frac{1}{2}$

74. $\frac{1}{3}$ $\frac{13}{36}$ $\frac{7}{18}$
S $\frac{12}{36}$ M $\frac{13}{36}$ L $\frac{14}{36}$
$\frac{1}{3} < \frac{13}{36} < \frac{7}{18}$

75. $\frac{5}{12}$ $\frac{1}{3}$ $\frac{1}{12}$
L $\frac{5}{12}$ M $\frac{4}{12}$ S $\frac{1}{12}$
$\frac{1}{12} < \frac{1}{3} < \frac{5}{12}$

76. $\frac{5}{8}$ $\frac{1}{2}$ $\frac{3}{4}$
M $\frac{5}{8}$ S $\frac{4}{8}$ L $\frac{6}{8}$
$\frac{1}{2} < \frac{5}{8} < \frac{3}{4}$

77. $\frac{3}{8}$ $\frac{5}{16}$ $\frac{1}{4}$
L $\frac{6}{16}$ M $\frac{5}{16}$ S $\frac{4}{16}$
$\frac{1}{4} < \frac{5}{16} < \frac{3}{8}$

78. $\frac{2}{3}$ $\frac{23}{36}$ $\frac{1}{2}$
L $\frac{24}{36}$ M $\frac{23}{36}$ S $\frac{18}{36}$
$\frac{1}{2} < \frac{23}{26} < \frac{2}{3}$

79. $\frac{11}{20}$ $\frac{1}{2}$ $\frac{4}{5}$
M $\frac{11}{20}$ S $\frac{10}{20}$ L $\frac{16}{20}$
$\frac{1}{2} < \frac{11}{20} < \frac{4}{5}$

80. $\frac{2}{3}$ $\frac{17}{30}$ $\frac{1}{2}$
L $\frac{20}{30}$ M $\frac{17}{30}$ S $\frac{15}{30}$
$\frac{1}{12} < \frac{17}{30} < \frac{2}{3}$

81. $\frac{6}{7}$ $\frac{29}{35}$ $\frac{4}{5}$
L $\frac{30}{35}$ M $\frac{29}{35}$ S $\frac{28}{35}$
$\frac{4}{5} < \frac{29}{35} < \frac{6}{7}$

82. $\frac{7}{50}$ $\frac{13}{100}$ $\frac{2}{25}$
L $\frac{14}{100}$ M $\frac{13}{100}$ S $\frac{8}{100}$
$\frac{2}{25} < \frac{13}{100} < \frac{7}{50}$

83. $\frac{3}{12}$ $\frac{13}{48}$ $\frac{9}{16}$
S $\frac{12}{48}$ M $\frac{13}{48}$ L $\frac{27}{48}$
$\frac{3}{12} < \frac{13}{48} < \frac{9}{16}$

84. $\frac{3}{5}$ $\frac{3}{10}$ $\frac{29}{50}$
L $\frac{30}{50}$ S $\frac{15}{50}$ M $\frac{29}{50}$
$\frac{3}{10} < \frac{29}{50} < \frac{3}{5}$

85. $\frac{23}{72}$ $\frac{5}{12}$ $\frac{5}{18}$
M $\frac{23}{72}$ L $\frac{30}{72}$ S $\frac{20}{72}$
$\frac{5}{18} < \frac{23}{72} < \frac{5}{12}$