

Complex Fractions

1. Simplify each complex fraction.

$$a) \frac{\frac{3}{4}}{\frac{5}{6}}$$

$$b) \frac{\frac{5}{2}}{\frac{7}{6}}$$

$$c) \frac{\frac{1}{2} + \frac{2}{3}}{\frac{3}{4}}$$

$$d) \frac{\frac{2}{3} + \frac{3}{4}}{\frac{5}{6} - \frac{1}{2}}$$

$$e) \frac{\frac{1}{2} - \frac{1}{3}}{\frac{1}{2} + \frac{1}{3}}$$

2. Simplify each complex fraction

$$a) \frac{3 - \frac{4}{3}}{\frac{1}{4} + 2}$$

$$b) \frac{1 + \frac{5}{6}}{1 - \frac{5}{6}}$$

$$c) \frac{2 - \frac{3}{2} + \frac{3}{4}}{4 - \frac{12}{5} - \frac{3}{10}}$$

$$d) \frac{-2 - \frac{3}{2} + \frac{5}{4}}{-\frac{2}{3} - \frac{3}{2}}$$

Complex Fractions

1. Simplify each complex fraction.

a) $\frac{\frac{3}{4}}{\frac{5}{6}}$ LCD=12 b) $\frac{\frac{5}{2}}{\frac{7}{6}}$ LCD=6 c) $\frac{\frac{1}{2} + \frac{2}{3}}{\frac{3}{4}}$ LCD=12

$$\frac{12\left(\frac{3}{4}\right)}{12\left(\frac{5}{6}\right)}$$

$$\boxed{\frac{9}{10}}$$

$$\frac{6\left(\frac{5}{2}\right)}{6\left(\frac{7}{6}\right)}$$

$$\boxed{\frac{15}{7}}$$

$$\frac{12\left(\frac{1}{2} + \frac{2}{3}\right)}{12\left(\frac{3}{4}\right)}$$

$$\frac{12\left(\frac{1}{2}\right) + 12\left(\frac{2}{3}\right)}{12\left(\frac{3}{4}\right)}$$

$$\frac{6 + 8}{9}$$

$$\boxed{\frac{14}{9}}$$

d) $\frac{\frac{2}{3} + \frac{3}{4}}{\frac{5}{6} - \frac{1}{2}}$ LCD=12 e) $\frac{\frac{1}{2} - \frac{1}{3}}{\frac{1}{2} + \frac{1}{3}}$ LCD=6

$$\frac{12\left(\frac{2}{3}\right) + 12\left(\frac{3}{4}\right)}{12\left(\frac{5}{6}\right) - 12\left(\frac{1}{2}\right)}$$

$$\frac{8 + 9}{10 - 6}$$

$$\boxed{\frac{17}{4}}$$

$$\frac{6\left(\frac{1}{2}\right) - 6\left(\frac{1}{3}\right)}{6\left(\frac{1}{2}\right) + 6\left(\frac{1}{3}\right)}$$

$$\frac{3 - 2}{3 + 2}$$

$$\boxed{\frac{1}{5}}$$

2. Simplify each complex fraction

a) $\frac{3 - \frac{4}{3}}{\frac{1}{4} + 2}$ LCD=12 b) $\frac{1 + \frac{5}{6}}{1 - \frac{5}{6}}$ LCD=6

$$\frac{12(3) - 12(\frac{4}{3})}{12(\frac{1}{4}) + 12(2)}$$

$$\frac{6(1) + 6(\frac{5}{6})}{6(1) - 6(\frac{5}{6})}$$

$$\frac{36 - 16}{3 + 24}$$

$$\frac{6 + 5}{6 - 5}$$

$$\boxed{\frac{20}{27}}$$

$$\boxed{11}$$

c) $\frac{2 - \frac{3}{2} + \frac{3}{4}}{4 - \frac{12}{5} - \frac{3}{10}}$ LCD=20 d) $\frac{-2 - \frac{3}{2} + \frac{5}{4}}{-\frac{2}{3} - \frac{3}{2}}$ LCD=12

$$\frac{20(2) - 20(\frac{3}{2}) + 20(\frac{3}{4})}{20(4) - 20(\frac{12}{5}) - 20(\frac{3}{10})}$$

$$\frac{12(-2) - 12(\frac{3}{2}) + 12(\frac{5}{4})}{12(-\frac{2}{3}) - 12(\frac{3}{2})}$$

$$\frac{40 - 30 + 15}{80 - 48 - 6}$$

$$\frac{-24 - 18 + 15}{-8 - 18}$$

$$\frac{10 + 15}{32 - 6}$$

$$\frac{-42 + 15}{-26}$$

$$\boxed{\frac{25}{26}}$$

$$\frac{-27}{-26} = \boxed{\frac{27}{26}}$$