

Les fractions de A à Z

Exercices résolus

Exercice 5

SOMME ET DIFFÉRENCE DE FRACTIONS AYANT MÊME DENOMINATEUR

Règle de calcul : $\frac{a}{c} \pm \frac{b}{c} = \frac{a \pm b}{c}$

Réduisons les fractions sous leur forme irréductible :

$$\frac{7}{2} - \frac{1}{2} = \frac{7-1}{2} = \frac{6}{2} = 3$$

$$\frac{3}{8} + \frac{1}{8} = \frac{3+1}{8} = \frac{4}{8} = \frac{4:4}{8:4} = \frac{1}{2}$$

$$\frac{6}{35} + \frac{9}{35} = \frac{6+9}{35} = \frac{15}{35} = \frac{15:5}{35:5} = \frac{3}{7}$$

$$\frac{7}{10} - \frac{3}{10} = \frac{7-3}{10} = \frac{4}{10} = \frac{4:2}{10:2} = \frac{2}{5}$$

$$\frac{11}{12} - \frac{5}{12} = \frac{11-5}{12} = \frac{6}{12} = \frac{6:6}{12:6} = \frac{1}{2}$$

$$\frac{8}{9} - \frac{5}{9} = \frac{8-5}{9} = \frac{3}{9} = \frac{3:3}{9:3} = \frac{1}{3}$$

$$\frac{9}{12} - \frac{1}{12} = \frac{9-1}{12} = \frac{8}{12} = \frac{8:4}{12:4} = \frac{2}{3}$$

$$\frac{7}{15} + \frac{2}{15} = \frac{7+2}{15} = \frac{9}{15} = \frac{9:3}{15:3} = \frac{3}{5}$$

Exercice 6

SOMME ET DIFFÉRENCE DE FRACTIONS AYANT DES DENOMINATEURS DISTINCTS

Réduisons les fractions sous leur forme irréductible :

$$a) \quad \frac{3}{4} - \frac{1}{2} = \frac{3}{4} - \frac{1 \times 2}{2 \times 2} = \frac{3}{4} - \frac{2}{4} = \frac{3-2}{4} = \frac{1}{4}$$

$$b) \quad \frac{1}{2} + \frac{3}{8} = \frac{1 \times 4}{2 \times 4} + \frac{3}{8} = \frac{4}{8} + \frac{3}{8} = \frac{4+3}{8} = \frac{7}{8}$$

$$c) \quad \frac{3}{8} - \frac{1}{4} = \frac{3}{8} - \frac{1 \times 2}{4 \times 2} = \frac{3}{8} - \frac{2}{8} = \frac{3-2}{8} = \frac{1}{8}$$

$$d) \quad \frac{5}{6} + \frac{2}{3} = \frac{5}{6} + \frac{2 \times 2}{3 \times 2} = \frac{5}{6} + \frac{4}{6} = \frac{5+4}{6} = \frac{9}{6} = \frac{9:3}{6:3} = \frac{3}{2}$$

$$e) \quad \frac{1}{3} + \frac{2}{9} = \frac{1 \times 3}{3 \times 3} + \frac{2}{9} = \frac{3}{9} + \frac{2}{9} = \frac{3+2}{9} = \frac{5}{9}$$

$$f) \quad \frac{1}{2} - \frac{1}{3} = \frac{1 \times 3}{2 \times 3} - \frac{1 \times 2}{3 \times 2} = \frac{3}{6} - \frac{2}{6} = \frac{3-2}{6} = \frac{1}{6}$$

$$g) \quad \frac{2}{3} - \frac{3}{5} = \frac{2 \times 5}{3 \times 5} - \frac{3 \times 3}{5 \times 3} = \frac{10}{15} - \frac{9}{15} = \frac{10-9}{15} = \frac{1}{15}$$

$$h) \quad \frac{5}{6} - \frac{9}{12} = \frac{5 \times 2}{6 \times 2} - \frac{9}{12} = \frac{10}{12} - \frac{9}{12} = \frac{10-9}{12} = \frac{1}{12}$$

$$i) \quad \frac{1}{4} + \frac{3}{8} = \frac{1 \times 2}{4 \times 2} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{2+3}{8} = \frac{5}{8}$$

$$j) \quad \frac{3}{8} - \frac{1}{16} = \frac{3 \times 2}{8 \times 2} - \frac{1}{16} = \frac{6}{16} - \frac{1}{16} = \frac{6-1}{16} = \frac{5}{16}$$

$$k) \quad \frac{1}{2} - \frac{1}{6} = \frac{1 \times 3}{2 \times 3} - \frac{1}{6} = \frac{3}{6} - \frac{1}{6} = \frac{3-1}{6} = \frac{2}{6} = \frac{1}{3}$$

$$l) \quad \frac{5}{6} - \frac{1}{4} = \frac{5 \times 2}{6 \times 2} - \frac{1 \times 3}{4 \times 3} = \frac{10}{12} - \frac{3}{12} = \frac{7}{12}$$

Exercice 7

QUOTIENT DE DEUX FRACTIONS

« Diviser par un nombre revient à multiplier par son inverse ».

Réduisons sous leur forme irréductible les fractions suivantes :

$$\frac{\frac{2}{3}}{\frac{1}{4}} = 2 \times \frac{4}{3} = \frac{8}{3}$$

$$\frac{\frac{3}{1}}{\frac{1}{4}} = 3 \times 4 = 12$$

$$\frac{\frac{-7}{1}}{\frac{1}{2}} = -7 \times 2 = -14$$

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

$$\frac{\frac{-10}{-15}}{\frac{1}{6}} = 10 \times \frac{6}{15} = 10 \times \frac{2}{5} = \frac{10}{5} \times 2 = 2 \times 2 = 4$$

$$\frac{\frac{3}{8}}{\frac{1}{2}} = \frac{3}{8} \times \frac{2}{1} = \frac{3}{4}$$

$$\frac{\frac{3}{4}}{\frac{1}{2}} = \frac{3}{4} \times \frac{2}{1} = \frac{3}{2}$$

$$\frac{\frac{-7}{4}}{\frac{1}{2}} = -\frac{7}{4} \times \frac{2}{1} = -\frac{7}{2}$$

$$\frac{\frac{3}{4}}{\frac{1}{3}} = \frac{3}{4} \times \frac{3}{1} = \frac{9}{4}$$

$$\frac{\frac{-2}{9}}{\frac{1}{2}} = \frac{-2}{9} \times \frac{2}{1} = \frac{-4}{9}$$

$$\frac{\frac{3}{8}}{\frac{1}{4}} = \frac{3}{8} \times \frac{4}{1} = \frac{3}{2}$$

$$\frac{\frac{3}{1}}{\frac{1}{4}} = 3 \times 4 = 12$$

$$\frac{\frac{-7}{4}}{\frac{1}{2}} = -\frac{7}{4} \times 2 = -7 \times \frac{2}{4} = -7 \times \frac{1}{2} = -\frac{7}{2}$$

$$\frac{\frac{9}{-10}}{\frac{-4}{15}} = -\frac{9}{10} \times \frac{15}{-4} = \frac{9}{4} \times \frac{15}{10} = \frac{9}{4} \times \frac{15:5}{10:5} = \frac{9}{4} \times \frac{3}{2} = \frac{27}{8}$$

$$\frac{\frac{-2}{9}}{\frac{-2}{3}} = \frac{-2}{9} \times \frac{3}{-2} = \frac{2}{9} \times \frac{3}{2} = 1 \times \frac{3:3}{9:3} = \frac{1}{3}$$