Écritures fractionnaires

Exercice 1. Addition

On réduit au même dénominateur :

$a = \frac{5}{4} + \frac{4}{5} = \frac{5 \times 5}{4 \times 5} + \frac{4 \times 4}{5 \times 4} = \frac{41}{20}$

$b = 2 + \frac{3}{4} = \frac{8}{4} + \frac{3}{4} = \frac{11}{4}$

$c = \frac{4}{3} - \frac{1}{6} = \frac{4 \times 2}{3 \times 2} - \frac{1}{6} = \frac{7}{6}$

$d = \frac{1}{10} - \frac{9}{100} = \frac{10}{100} - \frac{9}{100} = \frac{1}{100}$

$e = \frac{5}{12} + \frac{3}{8} = \frac{5 \times 2}{12 \times 2} + \frac{3 \times 3}{8 \times 3} = \frac{19}{24}$

$f = -\frac{1}{9} + \frac{5}{12} = -\frac{1 \times 4}{9 \times 4} + \frac{5 \times 3}{12 \times 3} = \frac{11}{36}$

$g = \frac{2}{7} - \frac{3}{8} = \frac{2 \times 8}{7 \times 8} - \frac{3 \times 7}{8 \times 7} = -\frac{5}{56}$

$h = \frac{1}{20} - \frac{4}{15} = \frac{1 \times 3}{20 \times 3} - \frac{4 \times 4}{15 \times 4} = -\frac{13}{60}$

$i = \frac{2}{35} - \frac{3}{7} = \frac{2}{35} - \frac{3 \times 5}{7 \times 5} = -\frac{13}{35}$

Exercice 2. Multiplication

On a simplifié avant d'effectuer les produits lorsque cela était possible.

$a = \frac{4}{3} \times \frac{2}{5} = \frac{4 \times 2}{3 \times 5} = \frac{8}{15}$

$b = \frac{6}{5} \times \frac{30}{7} = \frac{6 \times 30}{5 \times 7} = \frac{6 \times 6}{1 \times 7} = \frac{36}{7}$

$c = \frac{5}{4} \times \frac{8}{15} = \frac{5 \times 8}{4 \times 15} = \frac{1 \times 2}{1 \times 3} = \frac{2}{3}$

$d = 8 \times \frac{5}{6} = \frac{8 \times 5}{6} = \frac{4 \times 5}{3} = \frac{20}{3}$

$e = \frac{14}{15} \times \frac{20}{21} = \frac{14 \times 20}{15 \times 21} = \frac{2 \times 4}{3 \times 3} = \frac{8}{9}$

$f = 3 \times \left(-\frac{7}{9}\right) = -\frac{3 \times 7}{9} = -\frac{1 \times 7}{3} = -\frac{7}{3}$

Exercice 3. Division

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

$b = \frac{1}{\frac{2}{7}} = \frac{7}{2}$

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

$d = \frac{\frac{2}{5}}{\frac{1}{3}} = \frac{2}{5} \times 3 = \frac{2 \times 3}{5} = \frac{6}{5}$

$e = -\frac{\frac{5}{2}}{\frac{10}{3}} = -\frac{5}{2} \times \frac{3}{10} = -\frac{5 \times 3}{2 \times 10} = -\frac{1 \times 3}{2 \times 2} = -\frac{3}{4}$

Exercice 4. Pêle-mêle

$a = 2 + 3 \times \frac{4}{5} = 2 + \frac{3 \times 4}{5} = 2 + \frac{12}{5} = \frac{22}{5}$

$b = \left(\frac{3}{2} - 1\right) \times 4 = \frac{1}{2} \times 4 = 2$

$c = \frac{3}{2 + \frac{1}{4}} = \frac{3}{\frac{9}{4}} = 3 \times \frac{4}{9} = \frac{4}{3}$

$d = \frac{3}{2} + \frac{3}{\frac{1}{4}} = \frac{3}{2} + 3 \times 4 = \frac{3}{2} + 12 = \frac{27}{2}$

$e = \frac{2 + \frac{1}{3}}{2 - \frac{1}{3}} = \frac{\frac{7}{3}}{\frac{5}{3}} = \frac{7}{3} \times \frac{3}{5} = \frac{7}{5}$

$f = \frac{12}{7} \times \frac{14}{9} \times \frac{15}{8} = \frac{4}{1} \times \frac{2}{3} \times \frac{15}{8} = \frac{8 \times 15}{3 \times 8} = 5$

$g = \frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \times \frac{6}{5} = \frac{6}{2} = 3$

$h = \frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} = \frac{1}{5}$