

Corrigés : Calculer une somme de relatifs fractionnaires

1

a. $\frac{7}{9} \oplus \frac{5}{9} = \frac{7+5}{9} = \frac{12}{9} = \frac{12 \div 3}{9 \div 3} = \frac{4}{3}$

b. $\frac{19}{8} - \frac{15}{8} = \frac{19-15}{8} = \frac{4}{8} = \frac{4 \div 4}{8 \div 4} = \frac{1}{2}$

c. $\frac{5}{12} \oplus \frac{13}{12} = \frac{5+13}{12} = \frac{18}{12} = \frac{18 \div 6}{12 \div 6} = \frac{3}{2}$

d. $\frac{9}{11} \oplus \frac{7}{11} = \frac{9+7}{11} = \frac{16}{11}$

e. $\frac{7}{18} \oplus \frac{11}{18} = \frac{7+11}{18} = \frac{18}{18} = 1$

f. $\frac{27}{13} - \frac{1}{13} = \frac{27-1}{13} = \frac{26}{13} = 2$

2

a. $\frac{7,3}{7} \oplus \frac{2,7}{7} = \frac{7,3+2,7}{7} = \frac{10}{7}$

b. $\frac{12}{4,1} \oplus \frac{6}{4,1} = \frac{12+6}{4,1} = \frac{18}{4,1}$

c. $\frac{8,1}{3,05} \oplus \frac{1}{3,05} = \frac{8,1+1}{3,05} = \frac{9,1}{3,05}$

d. $\frac{8,1}{22} - \frac{2,1}{22} = \frac{8,1-2,1}{22} = \frac{6}{22} = \frac{3}{11}$

e. $\frac{19}{0,8} - \frac{12}{0,8} = \frac{19-12}{0,8} = \frac{7}{0,8}$

f. $\frac{7,3}{5,5} - \frac{0,3}{5,5} = \frac{7,3-0,3}{5,5} = \frac{7}{5,5}$

3

a. $\frac{8}{-5} + \frac{7}{5} = \frac{-8}{5} + \frac{7}{5} = \frac{-8+7}{5} = \frac{-1}{5}$

b. $\frac{-4}{-15} + \frac{1}{-15} = \frac{4}{15} + \frac{-1}{15} = \frac{4+(-1)}{15} = \frac{3}{15} = \frac{1}{5}$

c. $\frac{5}{6} - \frac{7}{-6} = \frac{5}{6} + \frac{7}{6} = \frac{5+7}{6} = \frac{12}{6} = 2$

d. $\frac{-9}{17} + \frac{1}{-17} = \frac{-9}{17} + \frac{-1}{17} = \frac{-9+(-1)}{17} = \frac{-10}{17}$

4

a. $\frac{5}{6} + \frac{-1}{3} = \frac{5}{6} + \frac{-1 \times 2}{3 \times 2} = \frac{5}{6} + \frac{-2}{6} = \frac{3}{6} = \frac{1}{2}$

b. $\frac{7}{9} - \frac{1}{-27} = \frac{7 \times 3}{9 \times 3} + \frac{1}{27} = \frac{21}{27} + \frac{1}{27} = \frac{22}{27}$

c. $-\frac{8}{5} + \frac{23}{50} = \frac{-8 \times 10}{5 \times 10} + \frac{23}{50} = \frac{-80}{50} + \frac{23}{50} = \frac{-57}{50}$

d. $\frac{45}{15} - \frac{7}{3} = \frac{5 \times 9}{5 \times 3} - \frac{7}{3} = \frac{9}{3} - \frac{7}{3} = \frac{2}{3}$

e. $\frac{4}{11} + 2 = \frac{4}{11} + \frac{2 \times 11}{1 \times 11} = \frac{4}{11} + \frac{22}{11} = \frac{26}{11}$

f. $\frac{8}{-91} + \frac{-1}{7} = \frac{-8}{91} + \frac{-1 \times 13}{7 \times 13} = \frac{-8}{91} + \frac{-13}{91} = \frac{-21}{91} = \frac{-3}{13}$

g. $\frac{5}{2} - \frac{-45}{4} + \frac{2}{8} = \frac{5 \times 2}{2 \times 2} + \frac{45}{4} + \frac{2 \times 1}{2 \times 4} = \frac{10}{4} + \frac{45}{4} + \frac{1}{4} = \frac{56}{4} = 14$

h. $4 - \frac{5}{-49} + \left(-\frac{8}{7}\right) = \frac{4 \times 49}{1 \times 49} + \frac{5}{49} - \frac{8 \times 7}{7 \times 7} = \frac{196}{49} + \frac{5}{49} - \frac{56}{49} = \frac{145}{49}$

i. $\frac{-7}{50} + \frac{2}{75} = \frac{-7 \times 3}{50 \times 3} + \frac{2 \times 2}{75 \times 2} = \frac{-21}{150} + \frac{4}{150} = \frac{-17}{150}$

j. $\frac{1}{5} + \frac{-2}{3} = \frac{1 \times 3}{5 \times 3} + \frac{-2 \times 5}{3 \times 5} = \frac{3}{15} + \frac{-10}{15} = \frac{-7}{15}$

k. $\frac{1}{12} - \frac{1}{9} = \frac{1 \times 3}{12 \times 3} + \frac{-1 \times 4}{9 \times 4} = \frac{3}{36} + \frac{-4}{36} = \frac{-1}{36}$

l. $\frac{4}{18} + \frac{5}{27} = \frac{2 \times 2 \times 3}{2 \times 9 \times 3} + \frac{5}{27} = \frac{6}{27} + \frac{5}{27} = \frac{11}{27}$

m. $\frac{17}{-24} + \left(-\frac{5}{36}\right) = \frac{-17 \times 3}{24 \times 3} + \frac{-5 \times 2}{36 \times 2} = \frac{-51}{72} + \frac{-10}{72} = \frac{-61}{72}$

n. $\frac{3}{16} - \frac{-1}{12} = \frac{3 \times 3}{16 \times 3} + \frac{1 \times 4}{12 \times 4} = \frac{9}{48} + \frac{4}{48} = \frac{13}{48}$

o. $\frac{8}{-17} - \left(-\frac{1}{15}\right) = \frac{-8 \times 15}{17 \times 15} + \frac{1 \times 17}{15 \times 17} = \frac{-120}{255} + \frac{17}{255} = \frac{-103}{255}$

AUTOEVALUATION

a. $\frac{42}{75} - \left(-\frac{22}{30}\right) = \frac{42}{75} + \frac{2 \times 11 \times 5}{2 \times 15 \times 5} = \frac{42}{75} + \frac{55}{75} = \frac{97}{75}$

b. $\frac{85}{4} + \frac{25}{-5} = \frac{85}{4} + \frac{5 \times (-5) \times 4}{5 \times 4} = \frac{85}{4} + \frac{-20}{4} = \frac{65}{4}$

c. $\frac{-12}{25} - 8 = \frac{-12}{25} + \frac{-8 \times 25}{1 \times 25} = \frac{-12}{25} + \frac{-200}{25} = \frac{-212}{25}$

d. $-\frac{14}{27} + \frac{-5}{108} = \frac{-14 \times 4}{27 \times 4} + \frac{-5}{108} = \frac{-56}{108} + \frac{-5}{108} = \frac{-61}{108}$

e. $\frac{9}{-55} - \frac{-7}{44} = \frac{-9 \times 4}{55 \times 4} + \frac{7 \times 5}{44 \times 5} = \frac{-36}{220} + \frac{35}{220} = \frac{-1}{220}$

f. $\frac{-9}{-18} - \frac{5}{30} + \left(-\frac{9}{6}\right) = \frac{3 \times 3}{3 \times 6} + \frac{5 \times (-1)}{5 \times 6} + \frac{-9}{6} = \frac{3}{6} + \frac{-1}{6} + \frac{-9}{6} = \frac{-7}{6}$