

Example 9

$$A = \frac{1}{\cancel{2}_1} \times \frac{\cancel{8}^4}{7} = \frac{4}{7}$$

$$C = 3 \times \frac{9}{2} = \frac{3}{1} \times \frac{9}{2} = \frac{27}{2}$$

$$E = \frac{1}{\cancel{2}} \times \frac{\cancel{2}}{\cancel{3}} \times \frac{\cancel{3}}{\cancel{4}} \times \dots \times \frac{\cancel{2019}}{\cancel{2020}} = \frac{1}{2020}$$

$$G = 3 \div \frac{9}{2} = \frac{3}{\frac{9}{2}} = \frac{1}{\cancel{3}} \times \frac{2}{\cancel{9}_3} = \frac{2}{3}$$

Exemple 10

$$A = \frac{1}{2 - \frac{2}{3 + \frac{3}{4 - \frac{4}{5}}}} = \frac{1}{2 - \frac{2}{3 + \frac{16}{5}}}$$

$$= \frac{1}{2 - \frac{2}{3 + \frac{3 \times 5}{16}}} = \frac{1}{2 - \frac{2}{\frac{48 + 15}{16}}}$$

$$= \frac{1}{2 - \frac{2}{\frac{63}{16}}} = \frac{1}{2 - 2 \times \frac{16}{63}}$$

$$= \frac{1}{2 - \frac{32}{63}} = \frac{1}{\frac{126 - 32}{63}} = \frac{63}{94}$$

$$C = \frac{3 - \frac{5}{7} + \frac{1}{2}}{3 + \frac{5}{7} - \frac{1}{2}} = \frac{\frac{42 - 10 + 7}{14}}{\frac{42 + 10 - 7}{14}}$$

$$= \frac{\frac{39}{14}}{\frac{45}{14}} = \frac{39}{45} = \frac{13}{15}$$

$$3 = 3 \times \frac{14}{14} = \frac{42}{14}$$

$$\frac{5}{7} = \frac{5 \times 2}{7 \times 2} = \frac{10}{14}$$

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

Exemple 11

$$2,405 = \frac{2405}{1000} = \frac{2405}{10^3}$$

$$-32,57 = -\frac{3257}{100} = -\frac{3257}{10^2}$$

$$0,159 = \frac{159}{1000} = \frac{159}{10^3}$$

$$-0,00931 = -\frac{931}{100000} = -\frac{931}{10^5}$$

$$45,007 = \frac{45007}{1000} = \frac{45007}{10^3}$$

Exemple 12

$$A = -\frac{23}{50} = -\frac{23}{2 \times 5^2} \quad A \text{ est un nombre décimal}$$

$$C = -56,879 \quad C \text{ est un nombre décimal}$$

$$E = -48 \quad E \text{ est un nombre décimal}$$

$$G = \frac{5}{7} \quad G \text{ n'est pas un nombre décimal}$$

$$I = 4,5 \times 10^{-5} = \frac{4,5}{10^5} = \frac{45}{10^6} \quad I \text{ est un nombre décimal}$$

$$K = -\frac{120}{325} = -\frac{24}{65} = -\frac{24}{5 \times 13}$$

K n'est pas un nombre décimal.

Exemple 13

$$\begin{aligned} A &= 0,000472 = 472 \times 10^{-6} \\ &= 4,72 \times 10^2 \times 10^{-6} \\ &= 4,72 \times 10^{-4} \end{aligned}$$

$$\begin{aligned} C &= 5,12 \times 10^3 - 5,234 \times 10^{-1} \\ &= 5120 - 0,5234 \\ &= 5119,4766 \\ &= 5,1194766 \times 10^3 \end{aligned}$$

$$\begin{array}{r} 5120 \\ 0,5234 \\ \hline 5119,4766 \end{array}$$

$$\begin{aligned} E &= 0,004158 \times 10^{12} \\ &= 4158 \times 10^{-6} \times 10^{12} \\ &= 4158 \times 10^6 \\ &= 4,158 \times 10^3 \times 10^6 \\ &= 4,158 \times 10^9 \end{aligned}$$

$$\begin{aligned} G &= 285 \times 10^{-3} + 0,0058 \times 10^2 \\ &= 0,285 + 0,58 = 0,865 \\ &= 8,65 \times 10^{-1} \end{aligned}$$

$$\begin{aligned} I &= \frac{3,5 \times 10^{-8} \times 1,7 \times 10^{14}}{28 \times 10^{-4}} = \frac{35 \times 10^{-1} \times 10^{-8} \times 17 \times 10^{-1} \times 10^{14}}{28 \times 10^{-4}} \\ &= \frac{5 \times 17}{284} \times \frac{10^4}{10^{-4}} = \frac{5 \times 17}{4} \times 10^8 = \frac{85}{4} \times 10^8 \\ &= 21,25 \times 10^8 = 2,125 \times 10 \times 10^8 \\ &= 2,125 \times 10^9 \end{aligned}$$

Exemple 14

$$A = (2 \times 10^{-3})^3 = 2^3 \times (10^{-3})^3 = 2^3 \times 10^{-9} \\ = 2^3 \times (2 \times 5)^{-9} = 2^3 \times 2^{-9} \times 5^{-9} = 2^{-6} \times 5^{-9}$$

$$C = \frac{9 \times (10^2)^3 \times 2^2 \times 10^8 \times 10^{-5}}{(10^9)^2} = \frac{3^2 \times 10^6 \times 2^2 \times 10^3}{10^{18}} \\ = 2^2 \times 3^2 \times 10^{-9} = 2^2 \times 3^2 \times (2 \times 5)^{-9} \\ = 2^2 \times 3^2 \times 2^{-9} \times 5^{-9} = 2^{-7} \times 3^2 \times 5^{-9}$$

$$E = \frac{(5^2 \times 11^{-5})^{-3}}{(11^5 \times 5^{-3})^2} = \frac{(5^2)^{-3} \times (11^{-5})^{-3}}{(11^5)^2 \times (5^{-3})^2} \\ = \frac{5^{-6} \times 11^{15}}{11^{10} \times 5^{-6}} = 11^5$$

$$G = \frac{2^{-5} \times (-6)^3 \times 3^{-4}}{-9^{-2} \times 8^{-4}} = \frac{2^{-5} \times (2 \times 3)^3 \times 3^{-4}}{(3^2)^{-2} \times (2^3)^{-4}} \\ = \frac{2^{-5} \times 2^3 \times 3^3 \times 3^{-4}}{3^{-4} \times 2^{-12}} = \frac{2^{-2} \times 3^{-1}}{2^{-12} \times 3^{-4}} = 2^{10} \times 3^3$$

$$I = \frac{1}{9} \times 3^n = \frac{3^n}{3^2} = 3^{n-2}$$

$$K = 5^{n+1} - 5^n = 5^n \times 5^1 - 5^n \\ = 5^n (5 - 1) = 5^n \times 4 = 2^2 \times 5^n$$