

Calculer et mettre le résultat sous forme d'une fraction irréductible :

$$a = \frac{29}{13} \cdot \frac{64}{21} \cdot \frac{49}{58} \cdot \frac{39}{7} \cdot \frac{1}{32}$$

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$$c = \frac{65}{294} \cdot \frac{845}{845}$$

$$e = 1 + \frac{7}{12} \cdot \frac{185}{35} + \frac{49}{14} \cdot \frac{3}{7} \cdot \frac{13}{12} - \frac{104}{104}$$

$$g = (0,27 : 4,5) : 0,009$$

$$i = \frac{15}{16} : \frac{25}{24}$$

$$k = \left[\frac{3}{2} - 1 \cdot \left(2 - \frac{4}{5} \right) \right] : \left(8 - \frac{36}{5} \right)$$

$$m = 5 - \frac{3}{5} : \left(\frac{23}{14} - \frac{1}{7} \right)$$

$$o = \left(\frac{2}{3} \right)^3 \cdot \frac{9}{4^2} + \frac{(3^2 - 2^3)^{15}}{5^2 - (3^2 - 6)^2}$$

$$q = \left(\frac{1}{15} - \frac{1}{20} \right) : \frac{13}{30} \cdot \frac{2}{13}$$

$$s = \frac{4 + \frac{1}{3} - \frac{1}{2}}{2 - \frac{5}{9}} \cdot \frac{1}{1 - \frac{1}{4}}$$

$$u = \left(\frac{1}{14} - \frac{1}{21} \right) : \frac{39}{28} \cdot \frac{2}{13}$$

$$w = \frac{3^4}{16} : \frac{3}{2^3} \cdot \left(\frac{2}{3} \right)^3 - \frac{3^2 - 2^3}{4^2 - (5 - 3)^3}$$

$$y = \frac{5}{4} - \frac{3}{2} + \frac{3}{4} \cdot \frac{\left(4 + \frac{1}{3} \right) \cdot \frac{4}{13} + \frac{18}{5} \cdot \frac{3}{5}}{\left(9 + \frac{1}{2} \right) : \frac{16}{2} + \frac{1}{2}}$$

$$b = \frac{240}{135} : \frac{16}{9}$$

$$d = \frac{\frac{1}{2} \cdot \frac{5}{3} \cdot \frac{6}{7}}{\frac{4}{4} \cdot \frac{8}{8}}$$

$$f = \left(5 \cdot \frac{7}{15} \right) : \left(\frac{15}{7} : 5 \right)$$

$$h = \frac{32}{6} \cdot \frac{3}{10} \cdot \frac{25}{8}$$

$$j = \frac{14}{21} \cdot \frac{9}{12} \cdot \frac{12}{15} \cdot \frac{13}{39}$$

$$l = \left(\frac{3}{5} + \frac{8}{5} \cdot \frac{11}{12} - \frac{24}{72} \right) \cdot \frac{3}{4}$$

$$n = \left(\frac{1}{2} - \frac{1}{3} \right) \cdot 3 - \left(\frac{1}{2} + \frac{1}{3} \right) : 3$$

$$p = \frac{15 - 2 \cdot 3}{2 \cdot 5 - 4} + \frac{1}{6} \cdot 9$$

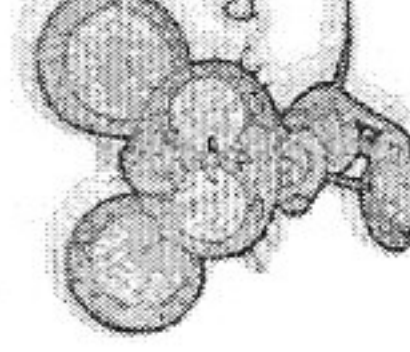
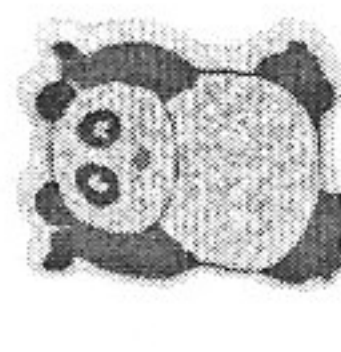
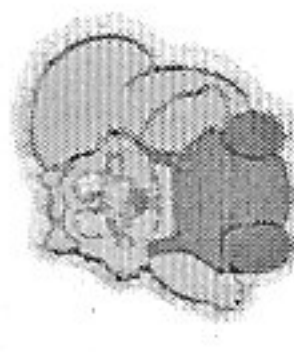
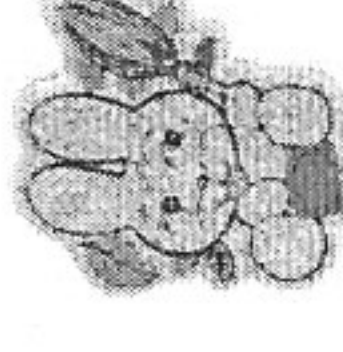
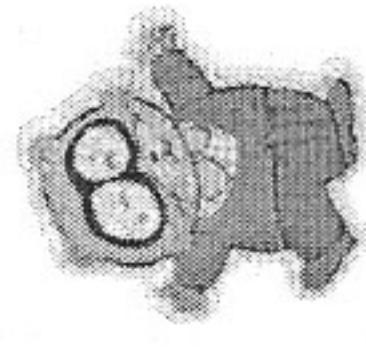
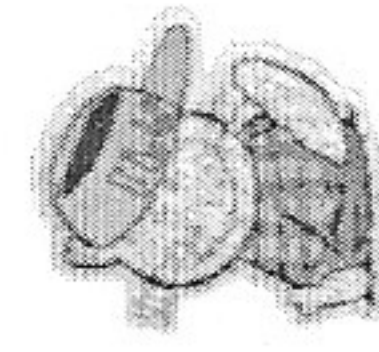
$$r = \frac{\frac{2}{3} + \frac{2}{4} - \frac{3}{4}}{\frac{4}{4} \cdot \frac{4}{5}}$$

$$t = \frac{16}{14} \left(3 - \frac{3}{8} \right)$$

$$v = \frac{8}{25} \cdot \frac{2 \cdot 15 - 3 \cdot 5}{19 - 5 \cdot 3} - 1$$

$$x = \frac{\frac{3}{8} - \frac{2}{3} \cdot \frac{2}{7}}{\frac{4}{9} - \frac{3}{8} \cdot \frac{2}{5}}$$

$$z = \frac{\frac{14}{10} - \frac{10}{28} + \frac{10}{28}}{\frac{14}{10} - \frac{14}{28} + \frac{14}{28}}$$



Calculer et mettre les résultats sous forme de fraction irréductible :

$$A = 2 - \frac{3}{39} \cdot \left[5 \cdot \left(\frac{17}{2} - 6 \right) - \frac{5}{12} \right]$$

$$B = \frac{\frac{7}{48} \cdot \frac{-16}{21} + \frac{5}{6}}{\frac{5}{6} - \frac{2}{3} \cdot \frac{-1}{3}}$$

$$C = \left[\frac{5}{9} \cdot \left(1 - \frac{2}{11} \right) - \frac{17}{22} \right] - \frac{28}{33}$$

$$D = \left[\frac{\frac{1}{2} - \frac{2}{3}}{\frac{3}{4}} - \frac{2}{\frac{3}{4}} \right] : \frac{\frac{2}{3}}{\frac{4}{5}}$$

$$E = \frac{-\frac{8}{9} \cdot \left(\frac{2}{-3} + \frac{3}{4} \right)}{-\frac{14}{-9} \cdot \left(\frac{5}{-2} \right) + 3} : \frac{1}{\frac{1}{2} \cdot \frac{1}{3} - \frac{1}{4}}$$

$$F = \frac{12}{\frac{9}{\frac{3}{2}}} : \frac{\frac{12}{9}}{\frac{3}{2}}$$

$$G = \frac{\frac{-7}{21} \cdot \frac{5}{14} + \frac{3}{14} \cdot \frac{5}{12} + \frac{-5}{6} \cdot \frac{2}{9}}{2 \cdot \left[7 - \frac{-3}{-7} \right] \cdot \frac{1}{3} \cdot \frac{2}{5} \cdot \frac{7}{3}}$$

$$H = \frac{9}{8} : \frac{8}{7} - \frac{7}{6} : \left[\frac{6}{5} - \frac{5}{4} \cdot \frac{4}{3} \right] - \frac{3}{2} : \frac{2}{1}$$

$$I = \frac{625}{-146} \cdot \frac{3 + 2 \cdot 35}{-1000 \cdot \frac{5}{-8}} \cdot \frac{-0,75}{0,375} \cdot \frac{68}{-17}$$

$$J = \frac{\frac{5}{6} - \frac{2}{3} - \left[\frac{24}{9} - \frac{9}{15} \right]}{\frac{72}{-48} \cdot \left[\frac{-4}{45} - \frac{77}{-35} \right]}$$

$$K = -\frac{10}{11} + \frac{1}{-11} : \frac{1}{121} \cdot \left[\frac{-7}{594} + \frac{4}{27} + \frac{3}{55} \right]$$

Solutions F2

$$\begin{aligned} A &= 2 - \frac{1}{13} \cdot \left[\frac{3 \cdot 5}{2} - \frac{5}{12} \right] \\ &= 2 - \frac{1}{13} \cdot \left[\frac{3}{2} - \frac{5}{12} \right] \\ &= 2 - \frac{1}{13} \cdot \frac{13}{12} \\ &= 2 - \frac{1}{12} \\ &= \frac{23}{12} \end{aligned}$$

$$\begin{aligned} C &= \left[\frac{5 \cdot 9}{11} - \frac{17}{22} \right] - \frac{28}{33} \\ &= \left[\frac{5}{11} - \frac{17}{22} \right] - \frac{28}{33} \\ &= -\frac{7}{22} - \frac{28}{33} \\ &= -\frac{77}{66} \\ &= -\frac{7}{6} \end{aligned}$$

$$\begin{aligned} Z &= \frac{63}{64} - \frac{7}{6} \cdot \left[\frac{5}{3} - \frac{3}{4} \right] - \frac{3}{4} \\ &= \frac{63}{64} - \frac{7}{6} \cdot \frac{5}{12} - \frac{3}{4} \\ &= \frac{63}{64} + \frac{15}{6} - \frac{3}{4} \\ &= \frac{63}{64} + \frac{160}{64} - \frac{48}{64} \\ &= \frac{175}{64} \end{aligned}$$

$$\begin{aligned} K &= -\frac{625}{146} \cdot \frac{3 + 70}{1000 \cdot 5} \cdot \frac{750 \cdot 68}{375 \cdot 17} \\ &= \frac{-625 \cdot 73 \cdot 8 \cdot 750 \cdot 68}{146 \cdot 1000 \cdot 5 \cdot 375 \cdot 17} \\ &= \frac{-4}{1} (= -4) \end{aligned}$$

$$\begin{aligned} B &= \frac{-16 \cdot 7}{48 \cdot 21} + \frac{5}{6} \\ &= \frac{5}{6} - \frac{2 \cdot 1}{3 \cdot 3} \\ &= \frac{1}{9} + \frac{5}{6} \\ &= \frac{5}{6} + \frac{2}{9} \\ &= \frac{13}{18} \\ &= \frac{13}{18} = \frac{13}{19} \end{aligned}$$

$$\begin{aligned} D &= \left[\frac{1}{2 \cdot 3} - \frac{2 \cdot 4}{3} \right] : \frac{2 \cdot 5}{3 \cdot 4} \\ &= \left[\frac{1}{6} - \frac{8}{3} \right] : \frac{5}{6} \\ &= -\frac{15}{6} : \frac{5}{6} \\ &= -3 \end{aligned}$$

$$\begin{aligned} L &= \frac{5}{6} - \frac{2}{3} - \frac{8}{3} + \frac{3}{5} \\ &= \frac{3}{2} \cdot \left[\frac{-4}{45} + \frac{11}{5} \right] \\ &= \frac{25}{30} - \frac{20}{30} - \frac{80}{30} + \frac{18}{30} \\ &= \frac{3}{2} \cdot \left[\frac{-4}{45} + \frac{99}{45} \right] \\ &= \frac{57}{30} \\ &= \frac{3 \cdot 95}{2 \cdot 45} \\ &= \frac{19}{10} \\ &= \frac{19}{10} = \frac{6}{10} = \frac{3}{5} \end{aligned}$$

$$\begin{aligned} E &= -\frac{8 \cdot \frac{1}{12}}{-\frac{14 \cdot 5}{9 \cdot 2} + 3} : \frac{1}{\frac{1}{6} - \frac{1}{4}} \\ &= -\frac{2}{8} : -\frac{1}{12} \\ &= \frac{2 \cdot 9}{27 \cdot 8} : (-12) \\ &= -\frac{2 \cdot 9}{27 \cdot 8 \cdot 12} \\ &= -\frac{1}{144} \\ G &= \frac{3}{4} - \frac{1 \cdot 3}{2 \cdot 4} - \frac{5}{6} \end{aligned}$$

$$\begin{aligned} &= \frac{3}{4} - \frac{3}{8} - \frac{5}{6} \\ &= \frac{18-9-20}{24} \end{aligned}$$

$$= -\frac{11}{24}$$

$$= \frac{68}{15} - \frac{38}{9} - \frac{10}{-6}$$

$$= \frac{34}{45} - \frac{19}{45} \cdot \left[\frac{6}{-7} \right] = \frac{1}{3} \cdot \left[\frac{6}{-7} \right] = -\frac{2}{7}$$

$$\begin{aligned} M &= -\frac{10}{11} - \frac{1}{11} \cdot 121 \cdot \frac{-7 \cdot 5 + 4 \cdot 2 \cdot 5 \cdot 11 + 3 \cdot 54}{27 \cdot 2 \cdot 11 \cdot 5} \\ &= -\frac{10}{11} - 11 \cdot \frac{-35 + 440 + 162}{270 \cdot 11} \end{aligned}$$

$$\begin{aligned} &= -\frac{10}{11} - \frac{11 \cdot 567}{270 \cdot 11} \\ &= -\frac{10}{11} - \frac{11 \cdot 21}{10 \cdot 11} \\ &= \frac{-100 - 231}{110} \\ &= \frac{-331}{110} \end{aligned}$$

$$\begin{aligned} F &= \frac{2}{3 \cdot 9} : \frac{12}{9 \cdot 2} \\ &= \frac{2}{27} : \frac{12}{6} \\ &= \frac{2}{27 \cdot 12} \cdot \frac{1}{2} \\ &= \frac{1}{324} \end{aligned}$$

$$\begin{aligned} H &= \frac{1 \cdot 5}{3 \cdot 14} + \frac{3}{14} : \frac{5}{12} + \frac{-5 \cdot 9}{6 \cdot 2} \\ &= \frac{-5+9}{42} \cdot \frac{3}{14} : \frac{5-45}{12} \\ &= \frac{4}{42} \cdot \frac{3}{14} : \frac{-40}{12} \\ &= \frac{2 \cdot 7 \cdot (-10) \cdot 18}{21 \cdot 2 \cdot 46 \cdot 3 \cdot 35} = \frac{-2}{161} \end{aligned}$$