

Calculs mêlés de fractions

Méthode n°1 : Effectuer des calculs mêlés de fractions

Ceinture orange :

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

Ceinture bleue :

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

$$C = \left(\frac{-2}{7} + \frac{5}{42}\right) \times \left(5 - \frac{3}{8}\right)$$

Ceinture noire :

$$D = \frac{\frac{2}{5} + \frac{-3}{4}}{2 + (-2) \times \frac{-7}{4}}$$

Correction :

$$\begin{aligned} A &= \frac{2}{3} - \frac{1}{3} \times \frac{4}{5} \\ &= \frac{2}{3} - \frac{4}{15} \\ &= \frac{2 \times 5}{3 \times 5} - \frac{4}{15} \\ &= \frac{10}{15} - \frac{4}{15} \\ &= \frac{6}{15} \\ &= \frac{6 \div 3}{15 \div 3} \\ &= \frac{2}{5} \end{aligned}$$

$$\begin{aligned} B &= \frac{-2}{3} \times \left(\frac{1}{2} - \frac{1}{4}\right) \\ &= \frac{-2}{3} \times \left(\frac{2}{4} - \frac{1}{4}\right) \\ &= \frac{-2}{3} \times \frac{2-1}{4} \\ &= \frac{-2}{3} \times \frac{1}{4} \\ &= -\frac{2}{12} \\ &= -\frac{2 \div 2}{12 \div 2} \\ &= -\frac{1}{6} \end{aligned}$$

$$\begin{aligned} C &= \left(\frac{-2}{7} + \frac{5}{42}\right) \times \left(5 - \frac{3}{8}\right) \\ &= \left(\frac{-2 \times 6}{7 \times 6} + \frac{5}{42}\right) \times \left(\frac{5 \times 8}{1 \times 8} - \frac{3}{8}\right) \\ &= \left(\frac{-12}{42} + \frac{5}{42}\right) \times \left(\frac{40}{8} - \frac{3}{8}\right) \\ &= \frac{-7}{42} \times \frac{37}{8} \\ &= -\frac{7 \times 37}{7 \times 6 \times 8} \\ &= -\frac{37}{48} \end{aligned}$$

$$\begin{aligned} D &= \frac{\frac{2}{5} + \frac{-3}{4}}{2 + (-2) \times \frac{-7}{4}} \\ &= \left(\frac{2}{5} + \frac{-3}{4}\right) : \left(2 + (-2) \times \frac{-7}{4}\right) \\ &= \left(\frac{8}{20} + \frac{-15}{20}\right) : \left(2 + \frac{14}{4}\right) \\ &= \frac{-7}{20} : \left(2 + \frac{7}{2}\right) \\ &= \frac{-7}{20} : \left(\frac{4}{2} + \frac{7}{2}\right) \\ &= \frac{-7}{20} : \frac{11}{2} \\ &= \frac{-7}{20} \times \frac{2}{11} \\ &= \frac{-14}{220} \\ &= -\frac{7}{110} \end{aligned}$$