

Fiche révision : Les fractions

Exercice 1:

$$A = \frac{4}{6} = \frac{2 \times 2}{3 \times 2} = \frac{2}{3}$$

$$B = \frac{12}{21} = \frac{4 \times 3}{7 \times 3} = \frac{4}{7}$$

$$C = \frac{27}{18} = \frac{3 \times 9}{2 \times 9} = \frac{3}{2}$$

$$D = \frac{18}{6} = \frac{3 \times 6}{1 \times 6} = \frac{3}{1} = 3$$

$$E = \frac{81}{36} = \frac{9 \times 9}{9 \times 4} = \frac{9}{4}$$

$$F = \frac{20}{12} = \frac{5 \times 4}{3 \times 4} = \frac{5}{3}$$

Exercice 2:

$$A = \frac{7}{8} + \frac{3}{8} = \frac{7+3}{8} = \frac{10}{8} = \frac{5 \times 2}{4 \times 2} = \frac{5}{4}$$

$$B = \frac{5}{9} - \frac{3}{9} = \frac{5-3}{9} = \frac{2}{9}$$

$$C = \frac{2}{7} + \frac{15}{7} = \frac{2+15}{7} = \frac{17}{7}$$

$$D = \frac{7}{3} - \frac{5}{3} = \frac{7-5}{3} = \frac{2}{3}$$

$$E = \frac{16}{13} + \frac{4}{13} = \frac{16+4}{13} = \frac{20}{13}$$

$$F = \frac{1}{6} + \frac{5}{6} = \frac{1+5}{6} = \frac{6}{6} = 1$$

Exercise 3:

$$A = \frac{1}{3} - \frac{2}{9} = \frac{1 \times 3}{3 \times 3} - \frac{2}{9} = \frac{3}{9} - \frac{2}{9} = \frac{3-2}{9} = \frac{1}{9}$$

$$B = \frac{2}{5} - \frac{3}{4} = \frac{2 \times 4}{5 \times 4} - \frac{3 \times 5}{4 \times 5} = \frac{8}{20} - \frac{15}{20} = \frac{-7}{20}$$

$$C = \frac{4}{3} + \frac{2}{5} = \frac{4 \times 5}{3 \times 5} + \frac{2 \times 3}{5 \times 3} = \frac{20}{15} + \frac{6}{15} = \frac{26}{15}$$

$$D = \frac{1}{3} + \frac{3}{7} = \frac{1 \times 7}{3 \times 7} + \frac{3 \times 3}{7 \times 3} = \frac{7}{21} + \frac{9}{21} = \frac{16}{21}$$

$$E = \frac{5}{4} + \frac{2}{7} = \frac{5 \times 7}{4 \times 7} + \frac{2 \times 4}{7 \times 4} = \frac{35}{28} + \frac{8}{28} = \frac{43}{28}$$

$$F = \frac{6}{2} - \frac{4}{5} = \frac{6 \times 5}{2 \times 5} - \frac{4 \times 2}{5 \times 2} = \frac{30}{10} - \frac{8}{10} = \frac{22}{10} = \frac{2 \times 11}{2 \times 5} = \frac{11}{5}$$

Exercise 4:

$$A = \frac{2}{7} \times \frac{3}{5} = \frac{2 \times 3}{7 \times 5} = \frac{6}{35}$$

$$B = \frac{1}{3} \times \frac{7}{2} = \frac{1 \times 7}{3 \times 2} = \frac{7}{6}$$

$$C = -\frac{3}{2} \times \frac{-5}{-7} = -\frac{3 \times 5}{2 \times 7} = -\frac{15}{14}$$

Exercise 5:

$$A = \frac{4}{3} : \frac{7}{5} = \frac{4}{3} \times \frac{5}{7} = \frac{4 \times 5}{3 \times 7} = \frac{20}{21}$$

$$B = \frac{5}{2} : \frac{6}{7} = \frac{5}{2} \times \frac{7}{6} = \frac{5 \times 7}{2 \times 6} = \frac{35}{12}$$

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

$$D = \frac{\frac{13}{7}}{\frac{5}{2}} = \frac{13}{7} \times \frac{2}{5} = \frac{13 \times 2}{7 \times 5} = \frac{26}{35}$$

Exercise 6:

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

$$\begin{aligned}
 B &= \frac{7}{15} - \frac{2}{15} \times \frac{9}{4} = \frac{7}{15} - \frac{2 \times 9}{15 \times 4} = \frac{7}{15} - \frac{2 \times 3 \times 3}{3 \times 5 \times 2 \times 2} = \frac{7}{15} - \frac{3}{10} \\
 &= \frac{7 \times 10}{15 \times 10} - \frac{3 \times 15}{10 \times 15} = \frac{70}{150} - \frac{45}{150} = \frac{25}{150} = \frac{1 \times 25}{6 \times 25} = \frac{1}{6}
 \end{aligned}$$

$$\begin{aligned}
 C &= \left(\frac{2}{3} - \frac{3}{2}\right) \times \left(\frac{1}{3} - \frac{2}{15}\right) = \left(\frac{2 \times 2}{3 \times 2} - \frac{3 \times 3}{2 \times 3}\right) \times \left(\frac{1 \times 15}{3 \times 15} - \frac{2 \times 3}{15 \times 3}\right) \\
 &= \left(\frac{4}{6} - \frac{9}{6}\right) \times \left(\frac{15}{45} - \frac{6}{45}\right) = -\frac{5}{6} \times \frac{9}{45} = -\frac{5 \times 9}{6 \times 9 \times 5} = -\frac{1}{6}
 \end{aligned}$$