

Exercice 1

$$A = \frac{15}{7} \quad B = -\frac{6}{5} \quad C = \frac{2}{3} \quad D = -\frac{4}{3}$$

$$B+C = -\frac{6}{5} + \frac{2}{3} = \frac{-6 \times 3}{5 \times 3} + \frac{2 \times 5}{3 \times 5} = \frac{-18}{15} + \frac{10}{15} = \frac{-18+10}{15} = \frac{-8}{15}$$

$$A-D = \frac{15}{7} - \frac{-4}{3} = \frac{15}{7} + \frac{4}{3} = \frac{15 \times 3}{7 \times 3} + \frac{4 \times 7}{3 \times 7} = \frac{45}{21} + \frac{28}{21} = \frac{73}{21}$$

$$B \times A = -\frac{6}{5} \times \frac{15}{7} = \frac{-6 \times 15}{5 \times 7} = \frac{-2 \times 6}{7} = -\frac{12}{7}$$

$$C:D = \frac{2/3}{-4/3} = \frac{2}{3} \times \frac{3}{-4} = \frac{6}{-12} = -\frac{6}{12} = -\frac{1}{2}$$

Exercice 2

$$A = -\frac{13}{7} + \frac{3}{7} \cdot \frac{5}{3} = -\frac{13}{7} + \left(\frac{3}{7} \times \frac{5}{3}\right) = -\frac{13}{7} + \frac{5}{7} = \frac{-13+5}{7} = -\frac{8}{7}$$

$$B = \frac{3}{4} + \frac{1}{2} \times \left(\frac{2}{3} - 1\right) = \frac{3}{4} + \frac{1}{2} \times \left(\frac{2-3}{3}\right) = \frac{3}{4} + \frac{1}{2} \times \left(-\frac{1}{3}\right) = \frac{3}{4} - \frac{1}{6} = \frac{3 \times 3}{4 \times 6} - \frac{1 \times 4}{6 \times 4} = \frac{9-4}{24} = \frac{5}{24}$$

$$C = \frac{\frac{2}{3} + \frac{1}{6}}{2 - \frac{1}{2}} = \frac{\frac{4}{6} + \frac{1}{6}}{\frac{4}{2} - \frac{1}{2}} = \frac{\frac{5}{6}}{\frac{3}{2}} = \frac{5}{6} \times \frac{2}{3} = \frac{10}{18} = \frac{5}{9}$$

Exercice 3

$$A = -(7-x) - (5+x) + (8-x) + (-x+4) = -7+x-5-x+8-x-x+4 = -2x$$

$$B = (2x^2-3x+4) - (-5x^2+6x-8) = 2x^2-3x+4+5x^2-6x+8 = 7x^2-9x+12$$

Exercice 4

$$C = -8(6-4x) = -48 + 32x$$

$$D = 8x(-7x+10) = -56x^2 + 80x$$

$$E = (7x-6)(9+3x) = 63x + 21x^2 - 54 - 18x = 21x^2 + 45x - 54$$

$$F = (4x-3)(x-4) = 4x^2 - 16x - 3x + 12 = 4x^2 - 19x + 12$$

Exercice 5

$$G = 2x(-x-1) - 3(5+4x) = -2x^2 - 2x - 15 - 12x = -2x^2 - 14x - 15$$

$$H = -7(5x+1) + (2x+3)(x+5) = -35x-7+2x^2+10x+3x+15 = 2x^2-22x+8$$

$$I = (-4x+6)(2x-8) - 5(7x-9) = -8x^2+32x+12x-48-35x+45 = -8x^2+9x-3$$

$$J = x(5-3x) - (1-4x)(x+5) = 5x-3x^2 - (x+5-4x^2-20x) = 5x-3x^2-x-5+4x^2+20x = x^2+24x-5$$