

Exercice 2

$$C = \frac{2^2 \times 3^{-4} \times 5}{2 \times 3^2 \times 5^{-3}} = 2^{2-1} \times 3^{-4-2} \times 5^{1-(-3)} = \boxed{2^{-6} \times 3^{-6} \times 5^4}$$

$$D = \frac{6^3 \times 25}{40^2} = \frac{(2 \times 3)^3 \times 5^2}{(2 \times 2 \times 2 \times 5)^2} = \frac{2^3 \times 3^3 \times 5^2}{2^6 \times 5^2} = \frac{2^3 \times 3^3}{2^6 \times 5^2} = \frac{2^3 \times 3^3}{2^6 \times 5^2}$$

$$= 2^{-3} \times 3^3 \times 5^{-2} = \boxed{2^{-3} \times 3^3 \times 5^{-2}}$$

Exercice 3

$$E = 3\sqrt{112} - 2\sqrt{7} + 5\sqrt{28} = 3\sqrt{16 \times 7} - 2\sqrt{7} + 5\sqrt{4 \times 7}$$

$$= 3 \times 4\sqrt{7} - 2\sqrt{7} + 5 \times 2\sqrt{7} = 12\sqrt{7} - 2\sqrt{7} + 10\sqrt{7} = \boxed{20\sqrt{7}}$$

Exercice 4

$$F = \left(\frac{2}{3}x - 3\right)^2 = \left(\frac{2}{3}x\right)^2 - 2 \times \frac{2}{3}x \times 3 + (3)^2 = \boxed{\frac{4}{9}x^2 - 4x + 9}$$

$$G = 5x - (2x-7)(x+3) = 5x - (2x^2 + 6x - 7x - 21) = 5x - (2x^2 - x - 21)$$

$$= 5x - 2x^2 + x + 21 = \boxed{-2x^2 + 6x + 21}$$

Exercice 5

$$H = 4x^2 - 9 = (2x)^2 - (3)^2 = \boxed{(2x-3)(2x+3)}$$

$$I = (x+2)(2x-5) - (3x+1)(x+2) = (x+2)[(2x-5) - (3x+1)]$$

$$= (x+2)(2x-5-3x-1) = \boxed{(x+2)(-x-6)}$$

Exercice 6

$$1) x+3 = 7-2x \Leftrightarrow x+2x = 7-3 \Leftrightarrow 3x = 4 \Leftrightarrow \boxed{x = \frac{4}{3}}$$

$$2) 3x-5 > 5x-2 \Leftrightarrow -5+2 > 5x-3x \Leftrightarrow -3 > 2x$$

$$\Leftrightarrow 2x < -3 \Leftrightarrow x < -3/2$$

$$\text{Donc } \boxed{S =]-\infty; -3/2[}$$

$$3) 7x+6 \geq 4x-7 \Leftrightarrow 7x-4x \geq -7-6 \Leftrightarrow 3x \geq -13 \Leftrightarrow x \geq -13/3$$

$$\text{Donc } \boxed{S = [-13/3; +\infty[}$$

Exercice 7

(2)

$$J = \frac{5}{6} + 1 - \frac{10}{4} + \frac{2}{3} = \frac{5 \times 2}{6 \times 2} + \frac{1 \times 12}{1 \times 12} - \frac{10 \times 3}{4 \times 3} + \frac{2 \times 4}{3 \times 4} = \frac{10}{12} + \frac{12}{12} - \frac{30}{12} + \frac{8}{12}$$

$$= \frac{10 + 12 - 30 + 8}{12} = \frac{0}{12} = \boxed{0}$$

$$L = \frac{2 + \frac{1}{3}}{\frac{3}{7} \times \frac{28}{27}} = \frac{\frac{2 \times 3}{3} + \frac{1}{3}}{\frac{3 \times 28}{7 \times 27}} = \frac{\frac{6 + 1}{3}}{\frac{3 \times 4 \times 7}{7 \times 3 \times 9}} = \frac{\frac{7}{3}}{\frac{4}{9}}$$

$$= \frac{7 \times 9}{4 \times 3} = \frac{7 \times 3}{4} = \boxed{\frac{21}{4}}$$

$$M = \frac{10^{-4} \times (10^3)^2}{10^3} = \frac{10^{-4} \times 10^6}{10^3} = \frac{10^2}{10^3} = \frac{1}{10^1} = \boxed{\frac{1}{10} = 0,1}$$

$$(x+x)(x-x) = (x^2 - x^2) = 0 - x^2 = -x^2 = -4$$

$$[(x+x) - (x-x)](x+x) = (x+x)(x+x) = (x+x)(x+x) = I$$

$$[(x-x) - (x-x)](x+x) = (1-x-x)(x+x) =$$

$$\frac{1}{2} = x \Leftrightarrow x = \frac{1}{2} \Leftrightarrow (-F = x) \wedge (x = F) \Leftrightarrow x = F = (x) \wedge (x) \wedge (x)$$

$$x \leq 2 \Leftrightarrow x \leq x \leq 2 \leq 2 \Leftrightarrow 2 - x \leq 2 - x \leq 2 - x$$

$$J = \frac{1}{2} \wedge [= 2]$$

$$\frac{1}{2} - 5 \leq x \Leftrightarrow 2 - 5 \leq x \Leftrightarrow 1 - F - 5 \leq x \leq 2 \wedge F \Leftrightarrow F - 1 \leq x \leq 2 \wedge F$$

$$J = \frac{1}{2} \wedge [= 2]$$