

Correction intro 1 2^{nde} 11

Calculatrice non autorisée

Exercice 1 : (2 points) Calcul mental

Ecrire sur cette copie le résultat de chacun des calculs suivants :

$$135 + 76 = 211$$

$$35 - 76 = -41$$

$$3 + 7 \times 8 = 59$$

$$2 \times 7^2 = 98$$

$$14 \times 3 - 3^2 = 33$$

$$-4^2 = -16$$

$$24 \times 56 + 24 \times 44 = 2400$$

$$(1 - 4)^2 = 9$$

Exercice 2 :

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

$$A = \frac{1}{2} + \frac{15}{2} - \frac{3}{4}$$

$$A = \frac{16}{2} - \frac{3}{4}$$

$$A = \frac{32}{4} - \frac{3}{4}$$

$$\boxed{A = \frac{29}{4}}$$

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

$$B = -3 - \frac{8}{\frac{4}{5}}$$

$$B = -3 - 8 \times \frac{5}{4}$$

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

$$\boxed{B = -13}$$

$$C = \frac{1 - \frac{1}{3}}{2 - \frac{5}{2}}$$

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

$$C = \frac{\frac{2}{3}}{-\frac{1}{2}}$$

$$C = -\frac{2}{3} \times 2$$

$$\boxed{C = -\frac{4}{3}}$$

$$D = \frac{1}{2} \left(7 - \frac{1}{3} \right) \left(2 - \frac{1}{5} \right)$$

$$= \frac{1}{2} \left(\frac{21}{3} - \frac{1}{3} \right) \left(\frac{10}{5} - \frac{1}{5} \right)$$

$$= \frac{1}{2} \times \frac{20}{3} \times \frac{9}{5}$$

$$= \frac{2 \times 2 \times 5 \times 3 \times 3}{2 \times 3 \times 5}$$

$$\boxed{D = 6}$$

$$B) E = 3^5 \times \frac{3^{-5}}{3^{-8}} \times 3$$

$$E = 3^5 \times 3^{2+8} \times 3$$

$$E = 3^{5+10+1}$$

$$E = 3^{16}$$

$$F = 3^5 \times \left(\frac{1}{9}\right)^{-2} \times 27^3$$

$$F = 3^5 \times (3^{-2})^{-2} \times (3^3)^3$$

$$F = 3^5 \times 3^4 \times 3^9$$

$$F = 3^{18}$$

$$G = \frac{(4 \times 9)^2}{6^2} \times \frac{7S}{3^4}$$

$$G = \frac{(2^2 \times 3^2)^2 \times S^2 \times 3}{3^2 \times 2^2 \times 3^4}$$

$$G = \frac{2^4 \times 3^4 \times S^2 \times 3}{3^2 \times 2^2 \times 3^4}$$

$$G = 2^2 \times 3^{-1} \times S^2$$

$$c) H = (ab^2)^3 \times \frac{a^3}{b^2} \times b^{-3} \times \frac{b}{a^4}$$

$$H = \frac{a^3 \times b^6 \times a^3 \times b^{-2} \times b}{b^2 \times a^4}$$

$$H = \frac{a^6 \times b^5}{b^2 \times a^4}$$

$$H = a \times b^3$$

Exercise 3

$$A) A = 3(x+1) + (2x-1)(3x+1)$$

$$= 3x+3 + 6x^2 + 2x - 3x - 1$$

$$A = 6x^2 + 2x + 2$$

$$B = (x+1)^2 + (3x-1)^2$$

$$= x^2 + 2x + 1 + 9x^2 - 6x + 1$$

$$B = 10x^2 - 4x + 2$$

$$D = (x-2)(x+2) - (x+1)(2x-3)$$

$$= x^2 - 4 - (2x^2 - 3x + 2x - 3)$$

$$= x^2 - 4 - 2x^2 + 3x - 2x + 3$$

$$D = -x^2 + x - 1$$

$$\begin{aligned}
 E &= 2(x-1)(x+2)(3-x) \\
 &= (2x-2)(3x-x^2+6-2x) \\
 &= \underline{6x^2 - 2x^3 + 12x - 4x^2 - 6x + 2x^2 - 12 + 4x}
 \end{aligned}$$

$$\underline{E = -2x^3 + 4x^2 + 10x - 12}$$

$$\begin{aligned}
 \text{B) } F &= (x+2)(2x-1) + (x+2)(3x+4) \\
 &= (x+2)(2x-1+3x+4)
 \end{aligned}$$

$$\underline{F = (x+2)(5x+3)}$$

$$\begin{aligned}
 G &= (3x+1)(4-x) - (2+2x)(3x+1) \\
 &= (3x+1)((4-x) - (2+2x)) \\
 &= (3x+1)(4-x-2-2x)
 \end{aligned}$$

$$\underline{G = (3x+1)(-3x+2)}$$

$$\begin{aligned}
 H &= (2x-3)^2 + (2x-3) \\
 &= (2x-3)(2x-3+1)
 \end{aligned}$$

$$\underline{H = (2x-3)(2x-2)} \quad \text{ou } H = 2(2x-3)(x-1)$$

$$I = (2x+1)(x-1) - (x+1)(6x+3)$$

$$I = (2x+1)(x-1) - 3(x+1)(2x+1)$$

$$I = (2x+1)(x-1-3(x+1))$$

$$I = (2x+1)(x-1-3x-3)$$

$$\underline{I = (2x+1)(-2x-4)} \quad \text{ou } I = -2(2x+1)(x+2)$$

$$K = 2x^2 - 9$$

$$K = (\sqrt{2}x)^2 - 3^2$$

$$\underline{K = (\sqrt{2}x-3)(\sqrt{2}x+3)}$$

$$L = (x-1)^2 - (2x+3)^2$$

$$L = (x-1+2x+3)(x-1-(2x+3))$$

$$L = (3x+2)(x-1-2x-3)$$

$$\underline{L = (3x+2)(-x-4)}$$