

CORRECTION DU DEVOIR du 22/03/12

MATHEMATIQUES 4^{ème} 2&4 CSM Cocody

EXERCICE 1

1) on donne $A = 5 - 3x$ calcule la valeur numérique de A pour $x = -2$

$$A = 5 - 3 \times (-2)$$

$$A = 5 + 6$$

$$A = 11$$

2) réduis les sommes suivantes

$$A = -x - 9 - 2x + 4 + 5x$$

$$A = -x + 5x - 2x + 4 - 9$$

$$A = 2x - 5$$

$$B = -4xy - 9ab + 2ab - 3xy$$

$$B = -4xy - 3xy - 9ab + 2ab$$

$$B = -7xy - 7ab$$

$$C = 9 - (-3x + 1)$$

$$C = 9 + 3x - 1$$

$$C = 3x + 9 - 1$$

$$C = 3x + 8$$

$$D = 8x + (-4x - 6)$$

$$D = 8x - 4x - 6$$

$$D = 4x - 6$$

$$E = 6 - (2x^2 - x) - 3x$$

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

$$E = -2x^2 - 2x + 6$$

3) développe puis réduis

$$M_1 = x - 3 + 3(2x - 7)$$

$$M_1 = x - 3 + 6x - 21$$

$$M_1 = x + 6x - 3 - 21$$

$$M_1 = 7x - 24$$

$$M_2 = -3x(2 - 4x) + 2x + 5$$

$$M_2 = -6x + 12x^2 + 2x + 5$$

$$M_2 = 12x^2 - 6x + 2x + 5$$

$$M_2 = 12x^2 - 4x + 5$$

$$M_3 = (x - 4)(5 + x)$$

$$M_3 = 5x + x^2 - 20 - 4x$$

$$M_3 = x^2 + 5x - 4x - 20$$

$$M_3 = x^2 + x - 20$$

$$\begin{aligned}M_4 &= (-5 + 2x)(-3x + 4) \\M_4 &= 15x - 20 - 6x^2 + 8x \\M_4 &= -6x^2 + 15x + 8x - 20 \\M_4 &= -6x^2 + 23x - 20\end{aligned}$$

$$\begin{aligned}M_5 &= (x - 7)^2 \\M_5 &= x^2 - 2 \times x \times 7 + 7^2 \\M_5 &= x^2 - 14x + 49\end{aligned}$$

$$\begin{aligned}M_6 &= (1 + 2x)^2 \\M_6 &= 1^2 + 2 \times 1 \times 2x + (2x)^2 \\M_6 &= 1 + 4x + 4x^2\end{aligned}$$

$$\begin{aligned}M_7 &= (4 + x)(4 - x) \\M_7 &= 4^2 - x^2 \\M_7 &= 16 - x^2\end{aligned}$$

$$\begin{aligned}M_8 &= (5y - 2)(5y + 2) \\M_8 &= (5y)^2 - 2^2 \\M_8 &= 25y^2 - 4\end{aligned}$$

EXERCICE 2

Calcule de manière performante 31^2 ; 39×41 ; $72^2 - 71^2$

$$\begin{aligned}31^2 &= (30 + 1)^2 \\&= 30^2 + 2 \times 30 \times 1 + 1^2 \\&= 900 + 60 + 1 \\&= 961\end{aligned}$$

$$\begin{aligned}39 \times 41 &= (40 - 1)(40 + 1) \\&= 40^2 - 1^2 \\&= 1600 - 1 \\&= 1599\end{aligned}$$

$$\begin{aligned}72^2 - 71^2 &= (72 - 71)(72 + 71) \\&= 1 \times 143 \\&= 143\end{aligned}$$