Ch.3 : Calcul littéral et ch.4 : manipulation de formules

Série A	Série B

Exercice 1. (0.5+0.5+0.5+1+1+1.5=5 pts)

Série A	Série B
a) $x \cdot x^2 \cdot x^3 = \boxed{x^6}$	$x \cdot x^3 \cdot x^5 = \boxed{x^9}$
b) $(-y) \cdot y \cdot (-y) = \boxed{y^3}$	$(-y^2) \cdot y^2 \cdot (-y^2) = \boxed{y^6}$
c) $4a - (a - 3a) = \boxed{6a}$	$5a - (a - 4a) = \boxed{8a}$
d) $a + 3b - 3a - 8b = \boxed{-2a - 5b}$	$a + 2b - 4a - 6b = \boxed{-3a - 4b}$
e) $4x^2 - 6xy + 7xy - 8x^2 = \boxed{-4x^2 + xy}$	$3x^2 - 7xy + 8xy - 5x^2 = \boxed{-2x^2 + xy}$
f) $1 - [5x - (x + 5x) + 1] - x =$	$1 - [6x - (x + 6x) + 1] - x =$
$= 1 - [5x - 6x + 1] - x = 1 + x - 1 - x = \boxed{0}$	$= 1 - [6x - 7x + 1] - x = 1 + x - 1 - x = \boxed{0}$

Exercice 2. (1+1.5+1.5+2+2=8 pts)

Série A	Série B
a) $2x(x^2 - 3x + 4) = \boxed{2x^3 - 6x^2 + 8x}$	$3x(x^2 - 2x + 3) = \boxed{3x^3 - 6x^2 + 9x}$
b) $(2x - 3)(3x + 4) = 6x^2 + 8x - 9x - 12 =$	$(3x - 2)(4x + 3) = 12x^2 + 9x - 8x - 6 =$
$= \boxed{6x^2 - x - 12}$	$= \boxed{12x^2 + x - 6}$
c) $(4a^2 - 25) - (2a^2 - a - 6) =$	$(9a^2 - 16) - (6a^2 - a - 20) =$
$= 4a^2 - 25 - 2a^2 + a + 6 = \boxed{2a^2 + a - 19}$	$= 9a^2 - 16 - 6a^2 + a + 20 = \boxed{3a^2 + a + 4}$
d) $a(4a + 1)(4a - 1) = a(16a^2 - 4a + 4a - 1) =$	$a(5a + 1)(5a - 1) = a(25a^2 - 5a + 5a - 1) =$
$= a(16a^2 - 1) = \boxed{16a^3 - a}$	$= a(25a^2 - 1) = \boxed{25a^3 - a}$
e) $(x - 6)(x + 5) - x(x - 6) =$	$(x + 5)(x - 4) - x(x - 4) =$
$= x^2 + 5x - 6x - 30 - x^2 + 6x = \boxed{5x - 30}$	$= x^2 - 4x + 5x - 20 - x^2 + 4x = \boxed{5x - 20}$

Exercice 3. (3 pts)

1) VAR : r = rayon du disque ($r > 0$).

2) EQ : $530 = \pi \cdot r^2 \quad | : \pi$

3) RES : $\Rightarrow r^2 = \dfrac{530}{\pi} \quad | \sqrt{\ }$

$\Rightarrow r = \sqrt{\dfrac{530}{\pi}} \cong 13\,\text{cm}$

4) SOL : Le rayon du disque mesure $\boxed{13\,\text{cm}}$

1) VAR : r = rayon du disque ($r > 0$).

2) EQ : $380 = \pi \cdot r^2 \quad | : \pi$

3) RES : $\Rightarrow r^2 = \dfrac{380}{\pi} \quad | \sqrt{\ }$

$\Rightarrow r = \sqrt{\dfrac{380}{\pi}} \cong 11\,\text{cm}$

4) SOL : Le rayon du disque mesure $\boxed{11\,\text{cm}}$

Exercice 4. (1+3=4 pts)

a)

$V = \dfrac{B \cdot h}{3} \quad | \cdot 3$

$\Rightarrow B \cdot h = 3 \cdot V \quad | : B \neq 0$

$\Rightarrow \boxed{h = \dfrac{3 \cdot V}{B}}$

$V = \dfrac{B \cdot h}{3} \quad | \cdot 3$

$\Rightarrow B \cdot h = 3 \cdot V \quad | : h \neq 0$

$\Rightarrow \boxed{B = \dfrac{3 \cdot V}{h}}$

b)

1) VAR : B = aire base pyramide ($B > 0$).

2) EQ : $500 = \dfrac{B \cdot 25}{3} \quad | \cdot 3$

3) RES : $\Rightarrow 25 \cdot B = 1'500 \quad | : 25$

$\Rightarrow B = \dfrac{1'500}{25} = 60\,\text{m}^2$

4) SOL : L'aire de la base vaut $\boxed{60\,\text{m}^2}$

1) VAR : B = aire base pyramide ($B > 0$).

2) EQ : $700 = \dfrac{B \cdot 35}{3} \quad | \cdot 3$

3) RES : $\Rightarrow 35 \cdot B = 2'100 \quad | : 35$

$\Rightarrow B = \dfrac{2'100}{35} = 60\,\text{m}^2$

4) SOL : L'aire de la base vaut $\boxed{60\,\text{m}^2}$
