Nom : _____ MATH 9

MOCK EXAM	Calcul littéral

Le Châtelard

Identités remarquables :

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a-b)^2 = a^2 - 2ab + b^2$$

$$(a+b)(a-b) = a^2 - b^2$$

Exercise 1 (6 points) Calculate and provide the simplest result:

a) $(-2x) \cdot (4+x) =$

b) $2a - 7 - 4 =$

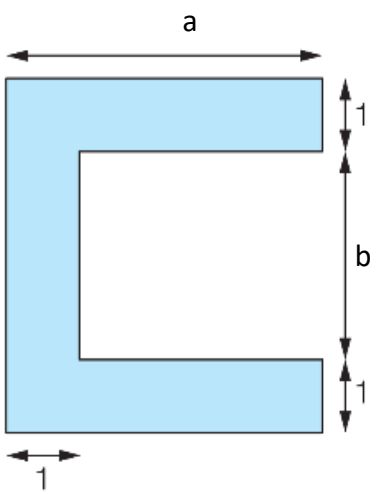
c) $10(4y+9) - 6y =$

d) $5(x+2) - 3x =$

e) $(2x+1)(x-1) =$

f) $3y + 2(5-y) + 4 =$

Exercise 2 (4 points) Calculate the area and the perimeter of the figure bellow:



area :

perimeter :

Exercice 3 (5 points) Factorisez en utilisant les identités remarquables :

a) $x^2 + 6x + 9$ =

b) $x^2 - 8x + 16$ =

c) $x^2 - 36$ =

d) $3x^2 - 6x + 3$ =

e) $-36 + 49y^2$ =

Exercice 4 (5 points) Factorisez en mettant en évidence les facteurs communs :

a) $5x - 15$ =

b) $5x^2 - 7x$ =

a) $5x^3 - 15x^2$ =

b) $27x^4 - 18x^3 - 15x^2$ =

c) $3x(x - 1) - x(1 - x)$ =

Exercice 5 (5 points) Factorisez en utilisant la méthode « somme, produit » :

a) $x^2 + 7x + 10$ =

b) $x^2 + 4x - 32$ =

c) $x^2 - 8x + 15$ =

d) $x^2 + 18x + 17$ =

e) $x^2 - 2x - 35$ =

Exercice 6 (15 points) Calculate and give an exact result:

a) $\sqrt{121}$ =

b) $\sqrt[3]{27}$ =

c) $\sqrt[4]{16}$ =

d) $\sqrt[3]{-8}$ =

e) $-\sqrt[3]{64}$ =

f) $\sqrt[17]{-1}$ =

g) $\sqrt{\frac{4}{9}}$ =

h) $\sqrt[3]{\frac{1}{1000}}$ =

i) $\sqrt[3]{-\frac{27}{8}}$ =

j) $\frac{\sqrt{4}}{\sqrt[3]{27}}$ =

k) $\sqrt{\sqrt[3]{1000000}}$ =

l) $\sqrt{\sqrt{36}-\sqrt[3]{-27}}$ =

m) $\sqrt{12}+\sqrt{75}-3\sqrt{48}$ =

n) $6\sqrt{2}\cdot\sqrt{8}\cdot\sqrt{12}\cdot\sqrt{\frac{1}{27}}$ =

o) $\left(\sqrt{2}-3\sqrt{8}+\sqrt{32}\right)\cdot\sqrt{2}$ =