Equations + complexes

Avec factorisation simple

- $2x^2 + 7x = 0$

$x(2x+7) = 0$

soit $x = 0$

soit $2x + 7 = 0$

$2x = -7$

$x = -\frac{7}{2}$

$S = \{0; -\frac{7}{2}\}$

- $(2x+1)(7x-5) + (2x+1)(-2x-5) = 0$

$(2x+1)[(7x-5)+(-2x-5)] = 0$

$(2x+1)(7x-5-2x-5) = 0$

$(2x+1)(5x-10) = 0$

soit $2x+1=0$

$2x = -1$

$x = -\frac{1}{2}$

soit $5x-10=0$

$5x = 10$

$x = \frac{10}{5} = 2$

$S = \{-\frac{1}{2}; 2\}$

Factorisation avec identités remarquables

- $81 - 100x^2 = 0$

$9^2 - (10x)^2 = 0$

$(9 - 10x)(9 + 10x) = 0$

soit $9 - 10x = 0$ soit $9 + 10x = 0$

$-10x = -9$ $10x = -9$

$x = \frac{-9}{-10}$ $x = \frac{-9}{10}$

$S = \left\{ \frac{9}{10} ; \frac{9}{10} \right\}$

RAPPEL

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

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

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

- $4x^2 + 40x + 100 = 0$

$(2x + 10)^2 = 0$

$2x + 10 = 0$

$2x = -10$

$x = \frac{-10}{2} = -5$

$S = \{-5\}$