

Résous les équations suivantes :

Equations	Solutions
1) $x^2 = 10$	$S = \{-\sqrt{10}; \sqrt{10}\}$
2) $-x^2 = 16$	$S = \emptyset$
3) $x^3 = 125$	$S = \{5\}$
4) $x^2 + 25 = 10x$	$S = \{5\}$
5) $3x^2 = 2x$	$S = \left\{0; \frac{2}{3}\right\}$
6) $x^3 + 27x = 9x^2 + 27$	$S = \{3\}$
7) $5x(x^2 - 3)(x + 7)^2(x^2 + 10) = 0$	$S = \{-7; -\sqrt{3}; 0; \sqrt{3}\}$
8) $(3x - 5)(7x + 2) = (3x - 5)(x - 1)$	$S = \left\{-\frac{1}{2}; \frac{5}{3}\right\}$
9) $(5x - 2)^2 = (2 - 5x)(2x + 1)$	$S = \left\{\frac{1}{7}; \frac{2}{5}\right\}$
10) $(4x + 7)^2 + (2x - 1)^2 = 2(4x + 7)(2x - 1)$	$S = \{-4\}$
11) $(3x + 10)^2 + (x - 1)^2 = (6x + 20)(1 - x)$	$S = \left\{-\frac{9}{4}\right\}$
12) $64x^3 + 1 = 0$	$S = \left\{-\frac{1}{4}\right\}$
13) $x^3 + x^2 = 6x + 6$	$S = \{-\sqrt{6}; -1; \sqrt{6}\}$
14) $x^2 + 12 = 7x$	$S = \{3; 4\}$
15) $x^4 = 81$	$S = \{-3; 3\}$
16) $x^3 + 4x^2 = 11x + 30$	$S = \{-5; -2; 3\}$
17) $(5x + 12)^2 = (3x - 1)^2$	$S = \left\{-\frac{13}{2}; -\frac{11}{8}\right\}$
18) $(3x - 5)^2 - (3x - 5)(2 - 5x) + (3x - 5)(x - 1) + (3x - 5) = 0$	$S = \left\{\frac{7}{9}; \frac{5}{3}\right\}$
19) $(x - 1)(5x^2 + 2x) + (x - 1)(4x^2 + 5) = (x - 1)(8x + 4)$	$S = \left\{\frac{1}{3}; 1\right\}$
20) $(5x^2 + 6x + 1)^2 = (4x^2 + 6x + 3)^2$	$S = \left\{-\sqrt{2}; \frac{-2}{3}; \sqrt{2}\right\}$
21) $(x + 1)(3x + 2) = 0$	$S = \left\{-1; -\frac{2}{3}\right\}$
22) $2(5x - 7)(3x + 2) = 0$	$S = \left\{-\frac{2}{3}; \frac{7}{5}\right\}$
23) $(x - 5)(x + 2) + (x - 5)(2x + 1) = 0$	$S = \{-1; 5\}$
24) $x^2 + 9x = 0$	$S = \{-9; 0\}$
25) $(x + 4)(x - 2) = (x + 4)(1 - 2x)$	$S = \{-4; 1\}$
26) $x(5x - 1) - 4x = 0$	$S = \{0; 1\}$
27) $(x - 3)(2 - x) + x - 3 = 0$	$S = \{3\}$

28) $(x+2)^2 = x(x+2)$	$S = \{-2\}$
29) $(x+5)^2 + (x+5)(x+1) = 0$	$S = \{-5; -3\}$
30) $(x+3)^2 - (2x+3)^2 = 0$	$S = \{-2; 0\}$
31) $x^2 = x(x+3)$	$S = \{0\}$
32) $(x+1)^2 - 9x^2 = 0$	$S = \left\{-\frac{1}{4}; \frac{1}{2}\right\}$
33) $(5x+1)^2 = (4x+5)^2$	$S = \left\{-\frac{2}{3}; 4\right\}$
34) $(x-9)(3+2x) - (1-x)(9-x) = 0$	$S = \{-4; 9\}$
35) $(3x+6)(x+5) - (x+2)(2x+1) = 0$	$S = \{-14; -2\}$
36) $8x - 4 + (x-3)(2x-1) = 0$	$S = \left\{-1; \frac{1}{2}\right\}$
37) $x^2 + 2x + 1 = (x+1)(2x-3)$	$S = \{-1; 4\}$
38) $(x+4)^2 - (2x+8)(5-3x) = 0$	$S = \left\{-4; \frac{6}{7}\right\}$
39) $(1-x)(x-2) = x^2 - 4x + 4$	$S = \left\{\frac{3}{2}; 2\right\}$
40) $(2x-3)(5x^2 - 5) = 0$	$S = \left\{-1; 1; \frac{3}{2}\right\}$
41) $x^3 - x = 2x^2 - 2$	$S = \{-1; 1; 2\}$

Si vous constatez qu'une erreur s'est malencontreusement glissée dans ce document, merci d'avertir Pascal Pasleau (pascal.pasleau@csgn.be) en stipulant la référence du document et le numéro de l'exercice incriminé.

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