Equazioni di secondo grado riconducili al primo. Complete di verifica e di soluzione guidata.

Solved Linear Equations

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1. $x^2 + 2x + 1 = x + x^2 - 1$ [-2] soluzione

2. $2x^2 - 1 - x = 2 - 2x + x^2 - 1 + x^2$ [2] soluzione

3. $x(x+1) + x = 4 + x + x^2$ [4] soluzione

4. $(x-1)(x+1) - 5 = x(x+1) - 2$ [-4] soluzione

5. $x + (x+1)\cdot(x-1) = 5 + x^2$ [6] soluzione

6. $(x+6)(x-6) + 30 - 9x = 3(10 - x^2) + 4x^2$ [-4] soluzione

7. $(x+1)^2 = x^2 - 3$ [-2] soluzione

8. $(3-x)\cdot(3+x) - 5 = x\cdot(2x+1) - 3x\cdot(x-1)$ [1] soluzione

9. $(x-2)^2 - (x-4)\cdot(x+4) - 3x\cdot(2x-1) - 24 = 3x\cdot(-2x+1) - 4\cdot(x+1)$ [indeterm.] soluzione

10. $3x\cdot(x+7) + (x-1)^2 = 2x\cdot(2x-3) - 14$ $\left[-\frac{3}{5}\right]$ soluzione

11. $(x-1)^2 + 2\cdot(x-1) + 6x = 5(x+1) + 1 - 5x + (x+1)^2$ [2] soluzione

12. $(x+3)\cdot(x-3) + (2x+3)^2 = 5x^2 + 7\cdot(x-5)$ [-7] soluzione

13. $3x(1-x) - (x-3)^2 = 12 - (2x+2)^2$ [1] soluzione

14. $(3x+1)(2x-3) = 6x(x-1) - x$ [impossibile] soluzione

15. $(x-3)(x+3) + 1 - 3x = (x-2)(x+2) + 4x - 5$ [1/7] soluzione

16. $(x-1)^2 + 1 = (x-2)(x+2) - 1$ [7/2] soluzione

17. $-2x\cdot(x-1) + (2x+3)^2 - 8x = 2x^2 - 3$ [-2] soluzione

18. $-(4x-3)^2 - 2(3x-1) - 8x = 24x - (4x+1)^2$ [-1] soluzione

19. $2 - 5x + (x + 2)(x + 3) = (x - 3)^2 + 2x$ [1/4] soluzione

20. $\frac{3\cdot(x-3)^2}{4} + \frac{1}{4} + (x+2)^2 = \frac{3}{4}x^2 - 6 + (x+1)\cdot(x-1) + 4x$ [4] soluzione

Soluzioni

$x^2 + 2x + 1 = x + x^2 - 1$

$x^2 - x^2 + 2x - x = -1 - 1$

$x = -2$

Verifica

$(-2)^2 + 2 \cdot (-2) + 1 = -2 + (-2)^2 - 1$

$4 - 4 + 1 = -2 + 4 - 1$

$1 = 2 - 1$

Verificata

$2x^2 - 1 - x = 2 - 2x + x^2 - 1 + x^2$

$2x^2 - x^2 - x^2 - x + 2x = 2 - 1 + 1$

$x = 2$

Verifica

$2 \cdot 2^2 - 1 - 2 = 2 - 2 \cdot 2 + 2^2 - 1 + 2^2$

$8 - 1 - 2 = 2 - 4 + 4 - 1 + 4$

$7 - 2 = 2 - 1 + 4$

$5 = 5$

Verificata

$x(x+1)+x=4+x+x^2$

$x^2+x+x-x-x^2=4$

$x=4$

Verifica

$4(4+1)+4=4+4+4^2$

$20+4=8+16$

$24=24$

Verificata

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

$x^2-1-5=x^2+x-2$

$-x=-2+1+5$

$-x=4$

$x=-4$

Verifica

$(-4-1)(-4+1)-5=-4(-4+1)-2$

$(-5)(-3)-5=-4(-3)-2$

$+15-5=+12-2$

$10=10$

$x+(x+1)\cdot(x-1)=5+x^2$

$x+x^2-1=5+x^2$

$x=5+1=6$

Verifica

$x+(x+1)\cdot(x-1)=5+x^2$

$6+(6+1)\cdot(6-1)=5+6^2$

$6+7\cdot(5)=5+36$

$6+35=41$

$41=41$

Verificata

$(x+6)(x-6)+30-9x=3(10-x^2)+4x^2$

$x^2-36+30-9x=30-3x^2+4x^2$

$x^2+3x^2-4x^2-9x=30+6$

$-9x=36$

$x=-\frac{36}{9}=-4$

Verifica

$(+2)(-10)+30-9(-4)=3(-6)+64$

$-20+30+36=-18+64$

$46=46$

Verificata

$(x+1)^2 = x^2 - 3$

$x^2 + 2x + 1 = x^2 - 3$

$2x = -3 - 1$

$x = \frac{-4}{2} = -2$

Verifica

$(-2+1)^2 = (-2)^2 - 3$

$(-1)^2 = 4 - 3$

$1 = 1$

Verificata

$(3-x)\cdot(3+x) - 5 = x\cdot(2x+1) - 3x\cdot(x-1)$

$9 - x^2 - 5 = 2x^2 + x - 3x^2 + 3x$

$-x^2 - 2x^2 + 3x^2 - 3x - x = 5 - 9$

$-4x = -4$

x=1

Verifica

$(3-1)\cdot(3+1) - 5 = 1\cdot(2\cdot(1)+1) - 3\cdot(1)(\cdot 1 - 1)$

$2\cdot 4 - 5 = 1\cdot 3 + 3\cdot 0$

$8 - 5 = 3$

$3 = 3$

verificata

$$(x-2)^2-(x-4)\cdot(x+4)-3x\cdot(2x-1)-24=3x\cdot(-2x+1)-4\cdot(x+1)$$
$$x^2-4x+4-x^2+16-6x^2+3x-24=-6x^2+3x-4x-4$$
$$-4x+4+16+3x-24=+3x-4x-4$$
$$+3x-3x=-4-4-16+24$$
$$0x=0$$
indeterminata

$$3x\cdot(x+7)+(x-1)^2=2x\cdot(2x-3)-14$$
$$3x^2+21x+x^2-2x+1=4x^2-6x-14$$
$$21x-2x+6x=-1-14$$
$$25x=-15$$
$$x=-\frac{15}{25}=-\frac{3}{5}$$

Verifica

$$3\cdot\left(-\frac{3}{5}\right)\cdot\left(-\frac{3}{5}+7\right)+\left(-\frac{3}{5}-1\right)^2=2\left(-\frac{3}{5}\right)\cdot\left(2\left(-\frac{3}{5}\right)-3\right)-14$$
$$-\frac{9}{5}\cdot\left(+\frac{32}{5}\right)+\left(-\frac{8}{5}\right)^2=\left(-\frac{6}{5}\right)\cdot\left(-\frac{6}{5}-3\right)-14$$
$$-\frac{288}{25}+\frac{64}{25}=\left(-\frac{6}{5}\right)\cdot\left(-\frac{21}{5}\right)-14$$
$$-\frac{224}{25}=\frac{126}{25}-14$$
$$-\frac{224}{25}=\frac{126-350}{25}$$
$$-\frac{224}{25}=-\frac{224}{25}$$

$$(x-1)^2+2\cdot(x-1)+6x=5(x+1)+1-5x+(x+1)^2$$

$$x^2-2x+1+2x-2+6x=5x+5+1-5x+x^2+2x+1$$
$$-2+6x=+5+1+2x$$
$$+6x-2x=+5+1+2$$
$$4x=8$$
$$x=2$$

Verifica

$$(2-1)^2+2\cdot(2-1)+6\cdot 2=5\cdot(2+1)+1-5\cdot 2+(2+1)^2$$
$$(1)^2+2\cdot(1)+12=5\cdot(3)+1-10+(3)^2$$
$$1+2+12=15+1-10+9$$
$$15=15$$

$$(x+3)\cdot(x-3)+(2x+3)^2=5x^2+7\cdot(x-5)$$

$$x^2-9+4x^2+12x+9=5x^2+7x-35$$
$$x^2+4x^2-5x^2+12x-7x=-35+9-9$$
$$+12x-7x=-35$$
$$5x=-35$$
$$x=-7$$

Verifica

$$(-7+3)\cdot(-7-3)+(2\cdot(-7)+3)^2=5\cdot(-7)^2+7\cdot(-7-5)$$
$$(-4)\cdot(-10)+(-14+3)^2=5\cdot 49+7\cdot(-12)$$
$$40+(-11)^2=245-84$$
$$40+121=245-84$$
$$161=161$$

$3x(1-x)-(x-3)^2=12-(2x+2)^2$

$3x-3x^2-(x^2-6x+9)=12-(4x^2+8x+4)$

$3x-3x^2-x^2+6x-9=12-4x^2-8x-4$

$3x+6x+8x=12-4+9$

$17x=17$

$x=1$

Verifica

$3(1-1)-(1-3)^2=12-(2+2)^2$

$-(-2)^2=12-(+4)^2$

$-4=12-16$

$-4=-4$

$(3x+1)(2x-3)=6x(x-1)-x$

$6x^2-9x+2x-3=6x^2-6x-x$

$-9x+2x-3=-6x-x$

$-9x+2x+6x+x=+3$

$0x=+3$

Impossibile

$(x-3)(x+3)+1-3x=(x-2)(x+2)+4x-5$

$x^2-9+1-3x=x^2-4+4x-5$

$-3x-4x=-4-5+9-1$

$-7x=-1$

$x=\frac{1}{7}$

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

$x^2-2x+1+1=x^2-4-1$

$-2x+1+1=-4-1$

$-2x=-7$

$2x=7$

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

$$-2x\cdot(x-1)+(2x+3)^2-8x=2x^2-3$$
$$-2x^2+2x+4x^2+12x+9-8x=2x^2-3$$
$$-2x^2+4x^2-2x^2+2x+12x-8x=-3-9$$
$$2x+12x-8x=-12$$
$$+6x=-12$$
$$x=-12/6=-2$$

$$-2(-2)\cdot(-2-1)+(2(-2)+3)^2-8(-2)=2(-2)^2-3$$
$$+4\cdot(-3)+(-4+3)^2+16=2(4)-1$$
$$-12+(-1)^2+16=8-3$$
$$-12+1+16=5$$
$$-11+16=5$$
$$5=5$$

$$-(4x-3)^2-2(3x-1)-8x=24x-(4x+1)^2$$
$$-(16x^2-24x+9)-6x+2-8x=24x-(16x^2+8x+1)$$
$$-16x^2+24x-9-6x+2-8x=24x-16x^2-8x-1$$
$$-9-6x+2=-1$$
$$-6x=-1+9-2$$
$$-6x=6$$
$$x=-1$$

$$-(-4-3)^2-2(-3-1)+8=-24-(-4+1)^2$$
$$-49+8+8=-24-9$$
$$-33=-33$$

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

$2-5x+x^2+3x+2x+6=x^2-6x+9+2x$

$2-5x+3x+6=-6x+9$

$-5x+3x+6x=9-2-6$

$4x=1$

$x=\frac{1}{4}$

Verifica

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

$2-5\cdot\frac{1}{4}+\left(\frac{1}{4}+2\right)\left(\frac{1}{4}+3\right)=\left(\frac{1}{4}-3\right)^2+2\cdot\frac{1}{4}$

$2-\frac{5}{4}+\frac{9}{4}\cdot\left(\frac{13}{4}\right)=\left(-\frac{11}{4}\right)^2+\frac{1}{2}$

$2-\frac{5}{4}+\frac{117}{16}=\frac{121}{16}+\frac{1}{2}$

$\frac{32-20+117}{16}=\frac{121+8}{16}$

$\frac{129}{16}=\frac{129}{16}$

Keywords

Algebra, equazioni, equazioni di primo grado, problemi traducibili in equazioni, esercizi con soluzioni
Algebra, equation, linear equations, Algebraic Equations solved, Problems and equations, Problem solving, exercises with solution
Algebra, ecuación, ecuaciones de primero grado
Algèbre, équations, système d'équations, équations en première
Algebra, Gleichung, die Gleichung

Arabic: مُعادَلَه
Chinese (Simplified): 方程式
Chinese (Traditional): 等式
Czech: rovnice
Danish: ligning
Estonian: võrrand
Finnish: yhtälö
Greek: εξίσωση
Hungarian: kiegyenlítés; egyenlet
Icelandic: jafna
Indonesian: persamaan
Italian: equazione
Japanese: 方程式
Korean: 방정식
Latvian: vienādojums
Lithuanian: lygtis
Norwegian: likning, det å betrakte som lik
Polish: równanie
Portuguese: equação
Romanian: ecuaţie
Russian: уравнение
Slovak: rovnica
Slovenian: enačba
Swedish: ekvation
Turkish: eşitlik