# Equazioni di secondo grado intere e frazionarie PASSED

risolvi le seguenti equazioni nell'insieme dei numeri reali

## equazioni monomie

| | | |
|---|---|---|
| 1 | $x^2 = 0$ | $3x^2 = 0$ |
| 2 | $\frac{5}{7}x^2 = 0$ | $\frac{2}{3}x^2 = 0$ |
| 3 | $4x^2 = 0$ | $10x^2 = 0$ |

## equazioni pure

| | | |
|---|---|---|
| 4 | $x^2 - 1 = 0$ | $\pm 1$ |
| 5 | $x^2 - 4 = 0$ | $\pm 2$ |
| 6 | $3x^2 - 27 = 0$ | $\pm 3$ |
| 7 | $x^2 + 1 = 0$ | $\nexists\, x \in R$ |
| 8 | $9x^2 - 4 = 0$ | $\pm \frac{2}{3}$ |
| 9 | $x^2 + 9 = 0$ | $\nexists\, x \in R$ |
| 10 | $3x^2 - 1 = 0$ | $\pm \frac{\sqrt{3}}{3}$ |
| 11 | $125x^2 - 5 = 0$ | $\pm \frac{1}{5}$ |
| 12 | $5x^2 + 125 = 0$ | $\nexists x \in R$ |
| 13 | $4 + 124x^2 = 0$ | $\nexists\, x \in R$ |
| 14 | $7 + 49x^2 = 0$ | $\nexists\, x \in R$ |

| | | |
|---|---|---|
| 15 | $5x^2 = 1$ | $\pm\frac{\sqrt{5}}{5}$ |
| 16 | $7 - 49x^2 = 0$ | $\pm\frac{\sqrt{7}}{7}$ |
| 17 | $7 = -3x^2$ | $\nexists\, x \in R$ |
| 18 | $\sqrt{3}x^2 + 1 = 0$ | $\nexists\, x \in R$ |
| 19 | $x^2 - \sqrt{2} = 0$ | $\pm\sqrt[4]{2}$ |
| 20 | $\frac{4}{5}x^2 - 49 = 0$ | $\pm\frac{7\sqrt{5}}{2}$ |
| 21 | $\frac{7}{8}x^2 - 1 = 0$ | $\pm\frac{2\sqrt{14}}{7}$ |
| 22 | $\frac{2}{5}x^2 = \frac{5}{2}$ | $\pm\frac{5}{2}$ |
| 23 | $\frac{3}{2} = \frac{8}{27}x^2$ | $\pm\frac{9}{4}$ |
| 24 | $\frac{1}{2}x^2 - \frac{1}{4} = 0$ | $\pm\frac{\sqrt{2}}{2}$ |
| 25 | $\frac{7}{3}x^2 + \frac{3}{7} = 0$ | $\nexists\, x \in R$ |
| 26 | $-\frac{1}{3}x^2 + \frac{1}{2} = 0$ | $\pm\frac{\sqrt{6}}{2}$ |
| 27 | $\frac{1}{2}(x^2+1) - \frac{4-x^2}{3} = \frac{6x^2+1}{12} - \frac{5}{12}$ | $\pm\frac{\sqrt{6}}{2}$ |
| 28 | $\frac{x^2+3x+2}{10} - \frac{7}{30}x = \frac{x}{3}\left(\frac{1}{5} + \frac{x}{2}\right)$ | $\pm\sqrt{3}$ |

| | equazioni spurie | |
|---|---|---|
| 29 | $x^2 - x = 0$ | $0;\ 1$ |
| 30 | $x^2 + 4x = 0$ | $-4;\ 0$ |
| 31 | $5x = 5x^2$ | $0;\ 1$ |
| 32 | $2x + x^2 = 0$ | $-2;\ 0$ |
| 33 | $5x^2 + 10x = 0$ | $-2;\ 0$ |
| 34 | $x - 2x^2 = 0$ | $0; 2$ |
| 35 | $5x - 3x^2 = 0$ | $0;\ \frac{5}{3}$ |
| 36 | $3x^2 + 5x = 0$ | $-\frac{5}{3};\ 0$ |
| 37 | $\frac{7}{9}x^2 - x = 0$ | $0;\ \frac{9}{7}$ |
| 38 | $x^2 + \frac{2}{3}x = 0$ | $-\frac{2}{3};\ 0$ |
| 39 | $\frac{81}{4}x^2 - \frac{9}{2}x = 0$ | $0;\ \frac{2}{9}$ |
| 40 | $\frac{3}{5}x^2 + x = 0$ | $-\frac{5}{3};\ 0$ |
| 41 | $\frac{9}{4}x^2 - \frac{2}{3}x = 0$ | $0;\ \frac{8}{27}$ |
| 42 | $\frac{25}{49}x^2 + x = 0$ | $-\frac{49}{25};\ 0$ |
| 43 | $x^2 = \sqrt{5}x$ | $0;\ \sqrt{5}$ |

| | | |
|---|---|---|
| 44 | $\sqrt{2}x^2 = -2x$ | $-\sqrt{2};\ 0$ |
| 45 | $\frac{2}{3}x^2 = \frac{1}{2}x$ | $0;\ \frac{3}{4}$ |
| 46 | $\frac{3}{7}x^2 - \frac{7}{3}x = 0$ | $0;\ \frac{49}{9}$ |
| 47 | $\frac{2}{5}x^2 - \frac{5}{2}x = 0$ | $0;\ \frac{25}{4}$ |
| 48 | $\frac{1}{3}x^2 = \frac{1}{4}x$ | $0;\ \frac{3}{4}$ |
| 49 | $\frac{x^2}{2} - \frac{x}{3} = 0$ | $0;\ \frac{2}{3}$ |
| 50 | $\frac{1-3x}{5} + \frac{6}{5} - x - \frac{1+x^2}{15} = \frac{4-x^2}{3}$ | $0;\ 6$ |
| 51 | $\left(1 - \frac{x}{15}\right)x + \frac{(2-x)(2+x)}{3} = \frac{2}{15} + \frac{3}{5}(2-x)$ | $0;\ 4$ |

## equazioni complete intere

| | | |
|---|---|---|
| 52 | $x^2 - 7x + 10 = 0$ | $2\ ;\ 5$ |
| 53 | $x^2 + 5x + 6 = 0$ | $-3;\ -2$ |
| 54 | $x^2 + 2x - 3 = 0$ | $-3;\ 1$ |
| 55 | $2x^2 + 7x + 3 = 0$ | $-3;\ -\frac{1}{2}$ |
| 56 | $x^2 + x + 12 = 0$ | $\nexists\ x \in R$ |

| | | |
|---|---|---|
| 57 | $9x^2 + 12x + 4 = 0$ | $-\frac{2}{3}; -\frac{2}{3}$ |
| 58 | $5x^2 - 2x - 16 = 0$ | $-\frac{8}{5}; 2$ |
| 59 | $2x^2 + 5x - 12 = 0$ | $-4; \frac{3}{2}$ |
| 60 | $25x^2 - 20x + 4 = 0$ | $\frac{2}{5}; \frac{2}{5}$ |
| 61 | $x^2 - 5x + 6 = 0$ | $2; 3$ |
| 62 | $x^2 + x - 12 = 0$ | $-4; 3$ |
| 63 | $x^2 + 7x - 8 = 0$ | $-8; 1$ |
| 64 | $9x^2 - 6x + 1 = 0$ | $\frac{1}{3}; \frac{1}{3}$ |
| 65 | $x^2 - x = 20$ | $-4; 5$ |
| 66 | $3x^2 + 5x + 3 = 0$ | $\nexists\, x \in R$ |
| 67 | $2x^2 = 3x + 2$ | $-\frac{1}{2}; 2$ |
| 68 | $x^2 = x + 2$ | $-1; 2$ |
| 69 | $16x = x^2 + 64$ | $8; 8$ |
| 70 | $9x^2 + 6x + 1 = 0$ | $-\frac{1}{3}; -\frac{1}{3}$ |

| | | |
|---|---|---|
| 71 | $10 = 3x^2 + x$ | $-2;\ \frac{5}{3}$ |
| 72 | $x^2 - 3\sqrt{2}x + 4 = 0$ | $\sqrt{2};\ 2\sqrt{2}$ |
| 73 | $3x^2 - x + 1 = 0$ | $\nexists\ x \in R$ |
| 74 | $4x^2 - 4x - 1 = 0$ | $\frac{1-\sqrt{2}}{2};\ \frac{1+\sqrt{2}}{2}$ |
| 75 | $x^2 + 4x + 1 = 0$ | $-2-\sqrt{3};\ -2+\sqrt{3}$ |
| 76 | $x^2 = -x - 2$ | $\nexists\ x \in R$ |
| 77 | $x^2 - (\sqrt{3} + \sqrt{2})x + \sqrt{6} = 0$ | $\sqrt{2};\ \sqrt{3}$ |
| 78 | $(2x+1)^2 - (x-3)^2 = 0$ | $-4;\ \frac{2}{3}$ |
| 79 | $x = (x+2)^2$ | $\nexists\ x \in R$ |
| 80 | $x^2 + (\sqrt{2} - \sqrt{3})x - \sqrt{6} = 0$ | $-\sqrt{2};\ \sqrt{3}$ |
| 81 | $5x^2 - 2x + \frac{1}{5} = 0$ | $\frac{1}{5};\ \frac{1}{5}$ |
| 82 | $\frac{x(x-2)}{4} = \frac{x+2}{3}$ | $-\frac{2}{3};\ 4$ |
| 83 | $\frac{3}{10}x^2 + \frac{1}{2} - \frac{x}{2} - \frac{3}{2} + \frac{2}{5}x = 0$ | $-\frac{5}{3};\ 2$ |
| 84 | $\frac{3}{2}x^2 - 2x + \frac{2}{3} = 0$ | $\frac{2}{3};\ \frac{2}{3}$ |

| | | |
|---|---|---|
| 85 | $\frac{1}{6}x^2+\frac{8}{3}x+\frac{32}{3}=0$ | $-8;\ -8$ |
| 86 | $2x^2-\frac{1}{6}x+3=0$ | $\nexists\ x\in R$ |
| 87 | $\frac{x^2+2}{2}=(x-2)^2+\frac{x^2-1}{3}$ | $\frac{4}{5};\ 4$ |
| 88 | $\frac{1}{3}(3-x)+\frac{x^2-1}{6}-\frac{2}{3}=0$ | $1;\ 1$ |
| 89 | $\frac{1}{3}(3-x)=\frac{2}{3}+\frac{(1-x)(1+x)}{6}$ | $1;\ 1$ |
| 90 | $\frac{1}{5}x=\frac{1}{5}x^2+\frac{5}{2}$ | $\nexists\ x\in R$ |
| 91 | $\frac{9}{4}x^2+\frac{15}{4}x-x+\frac{4}{3}=\frac{1}{3}-\frac{1}{4}x$ | $-\frac{2}{3};\ -\frac{2}{3}$ |
| 92 | $\frac{2}{3}x^2-\frac{1}{2}=\frac{2}{3}x-\frac{2}{3}$ | $\frac{1}{2};\ \frac{1}{2}$ |
| 93 | $2x^2+\frac{1}{2}x=\frac{9}{4}-\frac{3}{4}x-\frac{3}{2}$ | $-1;\ \frac{3}{8}$ |
| 94 | $\frac{4x+4}{3}-\frac{(x+2)^2}{4}=\frac{4-x^2}{6}$ | $2;\ 2$ |
| 95 | $\frac{2}{3}(x^2-1)-\frac{2-x}{3}=\frac{x^2-3}{2}$ | $-1;\ -1$ |
| 96 | $\frac{x^2}{3}+6(1-x)+\frac{x(x+2)}{2}=\frac{(x-3)x}{3}$ | $2;\ 6$ |
| 97 | $\frac{(x-1)^2}{4}-\frac{x-1}{2}+\frac{1}{4}=0$ | $2;\ 2$ |
| 98 | $(x-1)^3+\frac{5}{4}x=\frac{1}{4}x(2x+1)^2$ | $\frac{1}{2};\ \frac{1}{2}$ |

| | | |
|---|---|---|
| 99 | $2x-\frac{x}{2}=\frac{3}{2}+\frac{x^2-2}{4}$ | $3\pm\sqrt{5}$ |
| 100 | $\frac{(1-x)(x-2)}{3}=\frac{x(x+3)}{2}+\frac{x}{6}-\frac{2}{3}x^2$ | $-2;\ -2$ |
| 101 | $x^2-\frac{x-3}{6}+4=3x-2$ | $\nexists\, x\in R$ |
| 102 | $\frac{2-x}{6}+\frac{1-x}{3}+\frac{1}{8}x^2-1-x+\frac{3+2x}{4}+\frac{1+x^2}{4}=0$ | $\frac{4}{3};\ \frac{4}{3}$ |
| 103 | $\left(x+\frac{1}{2}\right)^2=\left(\frac{3}{2}-2x\right)^2$ | $\frac{1}{3};\ 2$ |
| 104 | $\frac{(2x-3)(2x+1)}{2}+5=(4x-1)^2+\frac{9-19x^2}{2}$ | $\frac{2}{3};\ \frac{2}{3}$ |
| 105 | $x^2-4\sqrt{3}x+12=0$ | $2\sqrt{3};\ 2\sqrt{3}$ |
| 106 | $x+\sqrt{5}=(2x-\sqrt{5})(x+\sqrt{5})$ | $-\sqrt{5};\ \frac{1+\sqrt{5}}{2}$ |
| 107 | $x(x+\sqrt{7})=14$ | $-2\sqrt{7};\ \sqrt{7}$ |
| 108 | $2\sqrt{3}x=x^2+2$ | $\sqrt{3}-1;\ \sqrt{3}+1$ |
| 109 | $\frac{x^2}{3}+3x+3=0$ | $\frac{-9-3\sqrt{5}}{2};\ \frac{-9+3\sqrt{5}}{2}$ |
| 110 | $x^2-\frac{1}{2}+\frac{1}{6}x=-\frac{1}{4}$ | $\frac{-1-\sqrt{37}}{12};\ \frac{-1+\sqrt{37}}{12}$ |
| 111 | $x^2+16=6\sqrt{2}x$ | $2\sqrt{2};\ 4\sqrt{2}$ |
| 112 | $4\sqrt{5}x-1=4x^2$ | $\frac{\sqrt{5}-2}{2};\ \frac{\sqrt{5}+2}{2}$ |

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|---|---|---|
| 113 | $2\left(\frac{1}{2}x-2\right)^2-19\left(\frac{1}{2}x-3\right)-4\left(\frac{1}{2}x-4\right)^2=\frac{7x-9}{2}-4x+10$ | $3;\ 3$ |

## equazioni di secondo grado frazionarie

| | | |
|---|---|---|
| 114 | $\frac{2}{x}=\frac{x}{2}$ | $\pm 2$ |
| 115 | $x=\frac{1}{x}$ | $\pm 1$ |
| 116 | $x-1=\frac{9}{x-1}$ | $-2;\ 4$ |
| 117 | $-\frac{2}{x+3}=\frac{1}{x^2}$ | $\nexists\, x\in R$ |
| 118 | $\frac{1}{x^2}=\frac{2}{x+3}$ | $-1;\ \frac{3}{2}$ |
| 119 | $\frac{2}{x^2+1}=\frac{1-x^2}{x^2+1}$ | $\nexists\, x\in R$ |
| 120 | $\frac{3}{x-1}=\frac{2x}{x+1}$ | $-\frac{1}{2};\ 3$ |
| 121 | $\frac{x}{x+4}+\frac{x+1}{x}=\frac{x+2}{x^2+4x}$ | $-1;\ -1$ |
| 122 | $\frac{4}{3}+\frac{1}{x-1}=\frac{1+x}{x-1}-\frac{x}{x+1}$ | $-\frac{1}{2};\ 2$ |
| 123 | $\frac{\sqrt{3}}{x}=\frac{x}{\sqrt{27}}$ | $\pm 3$ |
| 124 | $\frac{1}{x^2}=\frac{2-x}{x}$ | $1;1$ |
| 125 | $\frac{x^2-1}{2x+4}+1=\frac{1}{x+2}$ | $-1;\ -1$ |

| | | |
|---|---|---|
| 126 | $\frac{3x}{x+1}+\frac{x^2}{2x^2+x-1}=\frac{2x}{1-2x}$ | $0;\ \frac{1}{9}$ |
| 127 | $\frac{11-3x}{4(x-1)}=\frac{1+x}{x^2-1}-\frac{1}{x+1}$ | $-\frac{1}{3};\ 3$ |
| 128 | $\frac{1}{x^2-1}+\frac{x+1}{x-1}=\frac{1-x}{x+1}$ | $\nexists\ x\in R$ |
| 129 | $\frac{2}{x+1}+\frac{x}{1-x}=\frac{8}{1-x^2}$ | $-2;\ 3$ |
| 130 | $\frac{3x+2}{x^2+2x}+\frac{1}{x}=\frac{x+1}{x+2}$ | $-1;\ 4$ |
| 131 | $\frac{2}{x}-\frac{2x}{x+1}=\frac{2-x}{x}$ | $1;\ 0\ \ non\ accettabile$ |
| 132 | $\frac{x^2-11}{x^2+2x-3}+\frac{x}{x-1}=\frac{x+1}{x+3}$ | $-5;\ 2$ |
| 133 | $\frac{4}{x}+\frac{4x}{x-3}+\frac{13}{x^2-3x}=0$ | $-\frac{1}{2};\ -\frac{1}{2}$ |
| 134 | $\frac{x+3}{x+2}+\frac{4}{x^2+x-2}=\frac{x+2}{2x-2}$ | $\pm\sqrt{2}$ |
| 135 | $\frac{x+3}{x}-\frac{1}{x^2}=-\frac{1}{x}$ | $-2-\sqrt{5}\ ;\ -2+\sqrt{5}$ |
| 136 | $\frac{3}{x(x-2)}=\frac{4x-2}{x}$ | $\frac{5-\sqrt{21}}{4};\ \frac{5+\sqrt{21}}{4}$ |

## equazioni di secondo grado di vario tipo

| | | |
|---|---|---|
| 137 | $4x(2-x)+(x-2)=-11$ | $-\frac{3}{4};\ 3$ |
| 138 | $(2x-1)^2+4(x-2)(x+2)=-18$ | $\nexists\ x\in R$ |
| 139 | $x\left(x+\sqrt{7}\right)=14$ | $-2\sqrt{7};\ \sqrt{7}$ |

| | | |
|---|---|---|
| 140 | $\frac{1}{2}(x-1)+x=(x+1)(x-2)$ | $-\frac{1}{2};\ 3$ |
| 141 | $4+(1+2x)^2=0$ | $\nexists\ x \in R$ |
| 142 | $\left(\sqrt{3}-2x\right)^2=\left(x+\sqrt{3}\right)^2$ | $0;\ 2\sqrt{3}$ |
| 143 | $\frac{1}{3}(3-x)+\frac{x^2-1}{6}-\frac{2}{3}=0$ | $1;1$ |
| 144 | $\sqrt{2}(2x+1)+\left(x-\sqrt{2}\right)^2=x+4$ | $1-\sqrt{2};\ \sqrt{2}$ |
| 145 | $2\sqrt{3}x=x^2+2$ | $\sqrt{3}-1;\ \sqrt{3}+1$ |
| 146 | $\frac{3x+3}{3x+1}=-\frac{2}{3x^2+x}-\frac{1}{x}$ | $-1;\ -1$ |
| 147 | $x+2=\frac{6}{x+2}+1$ | $-4;\ 1$ |
| 148 | $\frac{1}{x+1}+\frac{1}{12}=\frac{1}{1-x}$ | $-12-\sqrt{145};\ -12+\sqrt{145}$ |
| 149 | $\frac{1}{x+\sqrt{3}}+\frac{1}{x-\sqrt{3}}=3$ | $\frac{1-2\sqrt{7}}{3};\ \frac{1+2\sqrt{7}}{3}$ |
| 150 | $\frac{5}{4x}-\frac{9}{4}=\frac{x-3}{x+1}$ | $-\frac{5}{13};\ 1$ |
| 151 | $\frac{x-5}{8}-\frac{x}{5}=\frac{5}{x-10}$ | $-\frac{10}{3};\ 5$ |
| 152 | $\frac{1}{x(2-x)}-\frac{4-x}{x(x+2)}=\frac{2}{4-x^2}$ | $2\ non\ accettabile;\ 3$ |
| 153 | $\frac{1}{x(x+3)}-\frac{1}{x(2-x)}=\frac{1}{6x}$ | $-1;\ 12$ |

| | | |
|---|---|---|
| 154 | $\frac{x+2}{x}-\frac{(2+3x)}{2(4-3x)}=1+\frac{4}{3x^2-4x}$ | $-6;\ \frac{4}{3}$ *non accettabile* |
| 155 | $\frac{4-25x}{x^2+2x}+3+\frac{3x+1}{x}=0$ | 1: 1 |
| 156 | $\frac{x}{x-6}-\frac{1}{2}=\frac{x}{6}+\frac{x+6}{6-x}$ | $-3;\ 18$ |
| 157 | $\frac{4}{(x-2)^2}+3=\frac{3x}{2-x}$ | $\nexists\, x \in R$ |
| 158 | $\frac{1}{3x-x^2}-\frac{1}{6x}=\frac{1}{2x-x^2}$ | $\nexists\, x \in R$ |
| 159 | $\frac{x-\sqrt{3}}{x\sqrt{3}-1}=\frac{2\sqrt{3}}{3x^2-1}-\frac{x}{x\sqrt{3}+1}$ | $-\frac{\sqrt{3}}{2};\ \sqrt{3}$ |
| 160 | $\frac{4}{(x-2)^2}-\frac{3}{x^2}=\frac{5}{4x-2x^2}$ | $\frac{-7-\sqrt{217}}{7};\ \frac{-7+\sqrt{217}}{7}$ |
| 161 | $\frac{5}{2x+2}+\frac{1}{2x-2}=\frac{3x+2}{x^2+x+1}$ | $0;\ 4$ |
| 162 | $\frac{5}{6+2x}-\frac{1}{x^2-3x}=\frac{5}{9-x^2}$ | $-\frac{3}{5};\ 2$ |
| 163 | $\frac{2}{(x-1)^2}-\left(x-\frac{1}{x-1}\right)\left(x-\frac{1}{x+1}\right)+\left(x-\frac{1}{x-1}\right)^2=0$ | $1-\sqrt{3};\ 1+\sqrt{3}$ |
| 164 | $\frac{1}{x-5}-\frac{1}{4-x}=\frac{2}{x-4}+\frac{1}{x-3}$ | $5-\sqrt{2};\ 5+\sqrt{2}$ |
| 165 | $\frac{x+3}{x+1}+\frac{x+5}{x+2}=\frac{2x+2}{x}$ | $-\frac{4}{3};\ 1$ |

| | | |
|---|---|---|
| 166 | $\frac{x^2}{200-x^2}=\frac{1}{7}$ | $\pm 5$ |
| 167 | $\frac{2(x-1)}{x+1}+\frac{(x+1)}{4(x-1)}=3$ | $\frac{-7-4\sqrt{7}}{3};\ \frac{-7+4\sqrt{7}}{3}$ |
| 168 | $\frac{x-2}{3-x}+\frac{2x+9}{x^2-9}=\frac{2x+1}{x+3}$ | $1-\sqrt{7};\ 1+\sqrt{7}$ |
| 169 | $\frac{5x^2-5x-28}{x^2-x-6}=\frac{4}{x+2}-\frac{2}{x-3}$ | $-1;\ \frac{12}{5}$ |
| 170 | $\frac{x+3}{x-1}-\frac{1-x}{x+3}=\frac{4x+28}{x^2+2x-3}$ | $3;\ -3\ non\ accettabile$ |
| 171 | $1-\frac{x-5}{x-2}-\frac{x+1}{x^2-5x+6}=\frac{x-5}{x^2-6x+8}$ | $5;\ 5$ |
| 172 | $\frac{x-1}{x-3}-\frac{x+2}{x+2}=\frac{4x-6}{x}$ | $\frac{5-\sqrt{7}}{2};\ \frac{5+\sqrt{7}}{2}$ |