| | Risolvi le seguenti equazioni irrazionali e con valore assoluto più impegnative | |
|---|---|---|
| 1 | $2\sqrt{x^2 - 3} = |3x + 1| - |x + 5|$ | $-2$ |
| 2 | $\sqrt{x - 2} + \dfrac{1}{\sqrt{x - 2}} = 5$ | $\dfrac{27 \pm 5\sqrt{21}}{2}$ |
| 3 | $\dfrac{3 - x^2 - |x - 3|}{\sqrt{1 - x^2}} = 0$ | $0$ |
| 4 | $\sqrt{x - 3} = \sqrt{x} - 1$ | $4$ |
| 5 | $\dfrac{5 + \sqrt{9 - 5x}}{\sqrt{x} - 2} = -8$ | $\dfrac{784}{529}; \ \dfrac{16}{9}$ |
| 6 | $\sqrt{(x - 1)(x + 5)} = 3x - 5$ | $3$ |
| 7 | $\sqrt{|x - 2| - 5} - \sqrt{4 - |x|} = 0$ | $-\dfrac{7}{2}$ |
| 8 | $\sqrt[3]{2 + x^3} = x + 1$ | $\dfrac{-3 + \sqrt{21}}{6}$ |
| 9 | $x + 2 = 11 - 2x - \sqrt{x^2 + 30 - 11x}$ | $\dfrac{43 - \sqrt{217}}{16}$ |
| 10 | $\dfrac{3x + 1}{\sqrt{x^2 + 1}} - 3\dfrac{x}{|x|} = 0$ | $\dfrac{4}{3}$ |
| 11 | $\sqrt[3]{8x - x^2} = \sqrt[3]{x + 5}$ | $\dfrac{7 \pm \sqrt{29}}{2}$ |
| 12 | $4\sqrt{2x + 3} + \sqrt{2x - 21} = 3\sqrt{2x + 27}$ | $11$ |
| 13 | $\sqrt{x + 1} = |2x - 2|$ | $\dfrac{9 \pm \sqrt{33}}{8}$ |
| 14 | $\sqrt{x + 1} = 4 - \sqrt{x} - \dfrac{1}{\sqrt{x + 1} - \sqrt{x}}$ | $\dfrac{9}{16}$ |
| 15 | $|x^2 - 2x + 1| - 1 = -|x|$ | $0; \ 1$ |
| 16 | $\sqrt[3]{x^2 - 1} = \sqrt{1 - 2x + x^2}$ | $1; \ 3$ |
| 17 | $2|x - 4| - x = \sqrt{3x^2 - 4x - 4}$ | $\dfrac{11 - \sqrt{19}}{3}$ |
| 18 | $\dfrac{x^2 - 1}{x^2 - 4} - \left|\dfrac{x}{x - 2}\right| = \dfrac{3}{2} - \left|\dfrac{2x + 1}{x + 2}\right|$ | $5 + \sqrt{19}; \ \dfrac{1 - 3\sqrt{11}}{7}$ |

| # | Equazione | Soluzione |
|---|-----------|-----------|
| 19 | $\dfrac{1}{3+\sqrt{x-3}}+\dfrac{1}{3-\sqrt{x-3}}=1$ | $6$ |
| 20 | $\sqrt[3]{\dfrac{8x^2}{x^2+2x+1}}=\left|\dfrac{3x}{2x+2}\right|$ | $-\dfrac{64}{91};\ -\dfrac{64}{37};\ 0$ |
| 21 | $5-\sqrt[3]{84-4(x^2+4)^{\frac{1}{3}}}=1$ | $\pm 11$ |
| 22 | $\sqrt[3]{12-(5x-9)^{\frac{1}{2}}}=2$ | $5$ |
| 23 | $x+\sqrt{(2x-1)^{\frac{1}{2}}}=5\left(x-\sqrt{2x-1}\right)^{\frac{1}{2}}-\dfrac{3}{\sqrt{x+\sqrt{2x-1}}}$ | $impossibile$ |
| 24 | $\dfrac{1}{3}-\dfrac{|x-1|+x}{1-|x|}=0$ | $impossibile$ |
| 25 | $\dfrac{1}{4+x^2}=-1-|x^2-4x+3|$ | $impossibile$ |
| 26 | $\sqrt{6x^2-2x}=|x-3|$ | $-\dfrac{9}{5};\ 1$ |
| 27 | $(x-1)(x+1)-|2x-4|=6+x^2$ | $impossibile$ |
| 28 | $\sqrt[3]{2x-3}+\dfrac{7}{\sqrt[3]{2x-3}}=8$ | $2;\ 173$ |
| 29 | $\dfrac{4}{\sqrt{x-2}}=\sqrt{x-4}-\sqrt{x-2}$ | $impossibile$ |
| 30 | $\sqrt[7]{4-\sqrt[3]{7+10(3x^2+4)^{\frac{1}{4}}}}=1$ | $\pm 2$ |
| 31 | $\sqrt[5]{x^2+12x+9}=\sqrt[5]{2x+3}$ | $-5\pm\sqrt{19}$ |
| 32 | $\sqrt[5]{x^2+7x+9}=\sqrt[5]{2x+3}$ | $-2;\ -3$ |
| 33 | $\sqrt{5x+\sqrt{12x-2}}=1+\sqrt{5x-1}$ | $\dfrac{1}{4}$ |
| 34 | $\sqrt{5(x+1)+\sqrt{2(6x+5)}}=1+\sqrt{5x+4}$ | $-\dfrac{3}{4}$ |
| 35 | $\sqrt[3]{a-x}-\sqrt[3]{b-x}=\sqrt[3]{a-b}$ | $a;\ b$ |

| | | |
|---|---|---|
| 36 | $\sqrt{6x^2 - 3x - 5} = 1 - x$ | $-1$ |
| 37 | $|x - 1| = 3x + 1$ | $0$ |
| 38 | $\dfrac{\sqrt{3x - 5}}{2 + |x|} = 2$ | $impossibile$ |
| 38 | $\sqrt[3]{4 - x} + \sqrt[3]{x + 24} = 4$ | $-23;\ 3$ |
| 40 | $\dfrac{x^3 + 3x^2 - x - 3}{|x + 1|} = 0$ | $-3;\ 1$ |
| 41 | $\sqrt{|2x - 6|} = |x| - x$ | $-\dfrac{3}{2};\ 3$ |