# Equazioni in valore assoluto

PASSED

Risolvi le seguenti equazioni in valore assoluto

| | | |
|---|---|---|
| 1 | $\lvert 2x-10\rvert = 0$ | $5$ |
| 2 | $\lvert x-10\rvert = 2$ | $8; 12$ |
| 3 | $\lvert x+8\rvert = 2$ | $-6\,;\ -10$ |
| 4 | $\lvert 3-x\rvert = 5$ | $-2;\ 8$ |
| 5 | $\lvert x-3\rvert = 2$ | $1;\ 5$ |
| 6 | $\lvert 2x-1\rvert = 5$ | $-2;\ 3$ |
| 7 | $\lvert 2x-1\rvert = 1$ | $0;\ 1$ |
| 8 | $\lvert 1-x\rvert = 4$ | $-3; 5$ |
| 9 | $\lvert x+8\rvert = -2$ | *impossibile* |
| 10 | $\lvert 4x+3\rvert = 3$ | $-\frac{3}{2};\ 0$ |
| 11 | $\lvert 5+2x\rvert = 3$ | $-1;\ -4$ |
| 12 | $\lvert 4-x\rvert = 1$ | $3;\ 5$ |
| 13 | $\lvert 5-2x\rvert = -1$ | *impossibile* |
| 14 | $\lvert x^2-8\rvert = 1$ | $\pm\sqrt{7};\ \pm 3$ |
| 15 | $7-\lvert 2-x\rvert = 3$ | $6;\ -2$ |
| 16 | $2\lvert x-1\rvert = 5$ | $-\frac{3}{2}; \frac{7}{2}$ |
| 17 | $3\lvert 2x-1\rvert = \frac{1}{2}$ | $\frac{5}{12}; \frac{7}{12}$ |
| 18 | $\lvert x^2-4x-5\rvert = 7$ | $-2;\ 6;\ 2\pm\sqrt{2};$ |
| 19 | $\left\lvert \frac{1}{3}x-1\right\rvert = 0$ | $3$ |

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| | | |
|---|---|---|
| 20 | $\left\|\frac{3x+2}{5}\right\| = 0$ | $-\frac{2}{3}$ |
| 21 | $\left\|\frac{x-3}{2}+1\right\| = 0$ | $1$ |
| 22 | $\|x+3\| = -1$ | *impossibile* |
| 23 | $\left\|\frac{1}{2}-\frac{2}{3}x\right\| = -1$ | *impossibile* |
| 24 | $-7\left\|\frac{x-3}{2}\right\| = 1$ | *impossibile* |
| 25 | $\frac{5}{\|2x+3\|} = 1$ | $-4; 1$ |
| 26 | $2-\frac{\|x+1\|}{3} = \frac{1}{2}+1$ | $-\frac{5}{2};\ \frac{1}{2}$ |
| 27 | $\|x^2-x\| = 6$ | $-2;\ 3$ |
| 28 | $\left\|\frac{1-3x}{2}+1\right\| = 3-\frac{1}{2}$ | $-\frac{2}{3};\ \frac{8}{3}$ |
| 29 | $\|x-1\| = x$ | $\frac{1}{2}$ |
| 30 | $\|x-2\| = 4-x$ | $3$ |
| 31 | $\left\|\frac{1}{2}x-5\right\| - x = \frac{9}{2}$ | $\frac{1}{3}$ |
| 32 | $\|2x-1\| + 3x = 4(x+1)$ | $-1;\ 5$ |
| 33 | $x + \|3x+2\| = 3(x+2)$ | $-\frac{8}{5};\ 4$ |
| 34 | $\|4x-x^2\| = 8+x-x^2$ | $\frac{5-\sqrt{89}}{4};\ \frac{8}{3}$ |
| 35 | $\|3x-5\| = 2x+1$ | $\frac{4}{5};\ 6$ |
| 36 | $\|x-1\| = 4-2x$ | $\frac{5}{3}$ |
| 37 | $\|x-1\| + 1 = 2x$ | $\frac{2}{3}$ |

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| | | |
|---|---|---|
| 38 | $\lvert 2x-1\rvert = 3x-2$ | $1$ |
| 39 | $\lvert 2x-1\rvert + 3x = 4(x+1)$ | $-1;\ 5$ |
| 40 | $\frac{7}{4} - \frac{1}{2}\left\lvert x - \frac{5}{2}\right\rvert = 2x$ | $\frac{1}{3}$ |
| 41 | $\lvert x^2-4\rvert = 2x^2 + x$ | $-\frac{4}{3};\ 1$ |
| 42 | $\lvert 4x+5\rvert = (2-x)(2+x) + 3 + x^2$ | $\frac{1}{2};\ -3$ |
| 43 | $\lvert 2x-2\rvert = x+1$ | $\frac{1}{3};\ 3$ |
| 44 | $x - \left\lvert \frac{1}{3}x\right\rvert = 2$ | $3$ |
| 45 | $\lvert x^2-4\rvert = x+2$ | $-2;\ 1;\ 3$ |
| 46 | $\lvert 4x+3\rvert = 3-x$ | $-2;\ 0$ |
| 47 | $\lvert 2x-1\rvert = x-6$ | *impossibile* |
| 48 | $3 + \lvert x+1\rvert - 2x = 0$ | $4$ |
| 49 | $x^2 + \lvert 3-5x\rvert = 3$ | $0;\ 1$ |
| 50 | $\lvert x^2 - 8x + 10\rvert - 2 = 0$ | $4 \pm 2\sqrt{2};\ 2;\ 6$ |
| 51 | $\lvert 2x+12\rvert = 7x-3$ | $3$ |
| 52 | $\lvert 2x+7\rvert - 4 = x$ | $-\frac{11}{3};\ -3$ |
| 53 | $\lvert x^2 - 3x + 2\rvert = -4 + 2x$ | $2;\ 3$ |
| 54 | $x^2 - 3 = \lvert x^2 - 4x + 3\rvert$ | $2$ |

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| | | |
|---|---|---|
| 55 | $4x^2 + x = \lvert 1 - x^2 \rvert$ | $\frac{-1 \pm \sqrt{21}}{10}$ |
| 56 | $\left\lvert \frac{2x-3}{5-x} \right\rvert = 2$ | $\frac{13}{4}$ |
| 57 | $\left\lvert \frac{3x-1}{x+3} \right\rvert = 1$ | $-\frac{1}{2};\ 2$ |
| 58 | $\left\lvert \frac{x-1}{x-2} \right\rvert = 5 - x$ | $3;\ 4 - \sqrt{5}$ |
| 59 | $\left\lvert \frac{3x-1}{2x+1} \right\rvert = \frac{1}{2}$ | $\frac{1}{8};\ \frac{3}{4}$ |
| 60 | $\left\lvert \frac{2-x}{x+1} \right\rvert = 4$ | $-2;\ -\frac{2}{5}$ |
| 61 | $\left\lvert \frac{x+1}{x-2} + \frac{2x}{x+2} - 3 \right\rvert = 0$ | $14$ |
| 62 | $5 - \frac{\lvert 8 + x \rvert}{x} = 3$ | $8$ |
| 63 | $2 + \left\lvert 1 - \frac{1}{x} \right\rvert = 1$ | *impossibile* |
| 64 | $6 - \left\lvert \frac{3x}{x+1} \right\rvert = 2$ | $-4;\ -\frac{4}{7}$ |
| 65 | $\left\lvert \frac{6-12x}{2-x} \right\rvert = 4$ | $-\frac{1}{4};\ \frac{7}{8}$ |
| 66 | $\left\lvert \frac{2x}{2+x} \right\rvert - 2 = 0$ | $-1$ |
| 67 | $\left\lvert \frac{2}{x+2} \right\rvert + 3 = 4$ | $-4;\ 0$ |
| 68 | $\left\lvert \frac{x+3}{x-1} \right\rvert = 2$ | $5;\ -\frac{1}{3}$ |
| 69 | $\left\lvert \frac{x^2 - x - 6}{x+1} \right\rvert = x - 3$ | $3$ |
| 70 | $\left\lvert \frac{x^2 + 3x}{2} \right\rvert = x + 6$ | $-4;\ 3$ |
| 71 | $\frac{\lvert x^2 - 4 \rvert - 3x}{x-1} = x + 1$ | *impossibile* |

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| | | |
|---|---|---|
| 72 | $1+\left\|1+\frac{1}{x}\right\|=4$ | $\frac{1}{2};\ -\frac{1}{4}$ |
| 73 | $\left\|\frac{x-1}{x}+1\right\|=\frac{5}{2}$ | $-2;\ \frac{2}{9}$ |
| 74 | $\left\|\frac{4}{x}-2\left(1-\frac{1}{x}\right)\right\|=10$ | $-\frac{3}{4};\ \frac{1}{2}$ |
| 75 | $\|3-x\|+\|x-4\|=0$ | *impossibile* |
| 76 | $\|x\|+\left\|\frac{3}{4}-x\right\|=0$ | *impossibile* |
| 77 | $\|x\|=2\|x+3\|$ | $-6;\ -2$ |
| 78 | $\|x^2-5x+6\|=\|x-3\|$ | $1;\ 3$ |
| 79 | $3\|x^2-1\|-4x=2\|x+4\|-1$ | $\frac{3\pm\sqrt{39}}{3}$ |
| 80 | $\|x^4-4x^3\|=-3\|x\|$ | $0$ |
| 81 | $\|x^2-x\|=x+\|x+1\|$ | $\frac{3\pm\sqrt{13}}{2}$ |
| 82 | $2\|x-1\|=x-\frac{1}{3}+\|2-x\|$ | $\frac{1}{6};\ \frac{11}{6}$ |
| 83 | $\|x\|-x^2+3=\|x-3\|$ | $0;\ 2$ |
| 84 | $x^2-\|x-3\|+1-\|x-2\|=0$ | $-1\pm\sqrt{5}$ |
| 85 | $2\|x-1\|-2=4\|x\|$ | $0$ |
| 86 | $2x\|-x-3\|-6x=10-\|x\|$ | $\frac{-13-\sqrt{89}}{4};\ \pm 2$ |
| 87 | $4-5\|x-1\|=1-2\|x+2\|$ | $-\frac{2}{7};\ 4$ |
| 88 | $2x+\|x^2+x\|=\|x^2-1\|-1$ | $0$ |

| | | |
|---|---|---|
| 89 | $2\lvert x^2-1\rvert+1=\lvert x^2-8\rvert$ | $\pm\sqrt{3}$ |
| 90 | $\lvert x^2-4\rvert+\lvert x-2\rvert=\lvert x+1\rvert$ | $\sqrt{6}-1;\ \sqrt{7}$ |
| 91 | $\lvert x-4\rvert+\lvert x+5\rvert=\lvert 3x-2\rvert$ | $-7;\ =\frac{11}{5}$ |
| 92 | $\lvert x^2-1\rvert-2\lvert x-1\rvert=\lvert 1-x\rvert-3x$ | $-3-\sqrt{13};\ 3-\sqrt{7}$ |
| 93 | $\lvert x^2+1-3x\rvert-\lvert 4x^2-5\rvert=0$ | $-2;\ 1;\ \frac{3\pm\sqrt{89}}{10}$ |
| 94 | $\lvert x^2-3\rvert+3x=\lvert x-1\rvert+2+\lvert -x\rvert$ | $-6;\ 0$ |
| 95 | $\lvert x\rvert+\left\lvert\frac{3}{4}-x\right\rvert=0$ | *impossibile* |
| 96 | $\left\lvert\frac{1-3x}{x}\right\rvert=\left\lvert\frac{4-x^2}{x^2}\right\rvert$ | $\frac{1\pm\sqrt{65}}{8}$ |
| 97 | $\frac{\lvert x-3\rvert}{1-x}=\frac{1-x}{\lvert x\rvert}$ | $\frac{5\pm\sqrt{17}}{4};\ -1$ |
| 98 | $\left\lvert\frac{-x^2+2x}{x-1}\right\rvert=\lvert x\rvert$ | $0;\ \frac{3}{2}$ |
| 99 | $\lvert x^2-x-2\rvert-x=\frac{1}{2}\lvert x-1\rvert$ | $-1;\ 3;\ \frac{-1+\sqrt{41}}{4}$ |
| 100 | $\frac{\lvert x^2+3\rvert}{\lvert x-1\rvert}-\lvert x-2\rvert=0$ | $-\frac{1}{3}$ |
| 101 | $3\lvert x+2\rvert-x\lvert x+3\rvert=x$ | $2$ |
| 102 | $\lvert 3x-2\rvert-\lvert 4-x\rvert=5+\lvert 2x-3\rvert$ | $4$ |
| 103 | $\lvert x^2-3x+2\rvert+\lvert x\rvert+1=\lvert x+7\rvert$ | $\frac{5-\sqrt{41}}{2};\ 4$ |
| 104 | $\left\lvert\frac{x}{3}+5\right\rvert+\lvert -x\rvert+\left\lvert\frac{1}{2}-x\right\rvert=-\frac{1}{4}$ | *impossibile* |
| 105 | $\frac{\lvert x\rvert-3}{\lvert x+1\rvert-5}=-3$ | $-\frac{21}{4};\ \frac{15}{4}$ |

| | | |
|---|---|---|
| 106 | $\frac{\lvert 2x+3\rvert -1}{\lvert x\rvert +1}=-\frac{1}{4}$ | $-\frac{9}{7};\ -\frac{5}{3}$ |
| 107 | $\frac{x^2}{\lvert x-1\rvert }+2x=\lvert x+1\rvert$ | $\frac{1}{2}$ |
| 108 | $\frac{\lvert x^2+3\rvert }{\lvert x-1\rvert }-\lvert x-2\rvert =0$ | $-\frac{1}{3}$ |
| 109 | $\frac{\lvert x-3\rvert -\lvert x^2-1\rvert }{\lvert 2-x\rvert +1}=-2$ | $-5;\ 2$ |
| 110 | $\left\lvert \frac{1}{3}x-3\right\rvert =\left(2+\frac{1}{3}x\right)-5\left\lvert \frac{2}{3}+x\right\rvert$ | *impossibile* |
| 111 | $\lvert -3x+3\rvert =-\lvert x-5\rvert$ | *impossibile* |
| 112 | $\left\lvert \frac{x^2-1}{x}\right\rvert =3-\frac{2-\lvert 2x^2+x+3\rvert +x}{x}$ | $-1$ |
| 113 | $\frac{6+\left\lvert x-\frac{1}{2}\right\rvert }{\lvert x-5\rvert }-4=0$ | $\frac{17}{2};\ \frac{29}{10}$ |
| 114 | $2\frac{\lvert 3x-2\rvert -1}{5}=3\lvert x-3\rvert$ | $\frac{13}{3};\ \frac{17}{7}$ |
| 115 | $\left\lvert \lvert x-3\rvert +x-3\right\rvert =1$ | $\frac{7}{2}$ |