Equazioni irrazionali

1	$\sqrt{1-x} = -1$	*impossibile*
2	$2\sqrt[3]{x-3}+1 = 5$	$x = 11$
3	$\sqrt{1-3x} = 8$	$x = -21$
4	$\sqrt[3]{\dfrac{x+1}{x-1}} = 2$	$x = \dfrac{9}{7}$
5	$\sqrt{7x+2} = \dfrac{9}{4}$	$x = \dfrac{7}{16}$
6	$\sqrt[3]{x-4} = 2$	$x = 12$
7	$2\sqrt{-x^2+4-8x} = 1$	$x_{1,2} = \dfrac{-8 \pm \sqrt{79}}{2}$
8	$\sqrt[3]{13x-5} = 5$	$x = 10$
9	$\sqrt[3]{3x-5} = 1$	$x = \dfrac{4}{3}$
10	$\sqrt{x-3} = 5-x$	$x = 4$
11	$\dfrac{\sqrt{6x+1}+3}{2} = x$	$x = 4$
12	$\sqrt{10-x} = 2x+8$	$x = -\dfrac{9}{4}$
13	$\sqrt{x^2+x+2} = \dfrac{x+3}{2}$	$x_1 = -\dfrac{1}{3};\ x_2 = 1$
14	$\sqrt{x+1} = x-1$	$x = 3$
15	$\sqrt[3]{x^3-5x-4} = x-1$	$x_1 = -\dfrac{1}{3};\ x_2 = 3$
16	$1+\sqrt{x^2+3} = 3x$	$x = 1$
17	$\sqrt{4x^2-7x-6} = 9-2x$	$x = 3$
18	$\sqrt{41-x^2}+1 = x$	$x = 5$
19	$\sqrt{x(2+x)}+2 = 4-x$	$x = \dfrac{2}{3}$
20	$\sqrt[3]{3x-4}\,\sqrt[3]{9x^2-5x+1} = 3x-2$	$x_1 = \dfrac{1}{3};\ x_2 = 4$
21	$x-17 = \sqrt{169-x^2}$	*impossibile*

Equazioni irrazionali

22	$x + \sqrt{2x - x^2} = 7$	*impossibile*
23	$3x + \sqrt{6x + 4} = 38$	$x = 10$
24	$4x + \sqrt{5 + 4x} = 7$	$x = 1$
25	$x + \sqrt{5(x + 2)} = 8$	$x = 3$
26	$2\sqrt{5 - 4x} + 4x = 5$	$x_1 = \dfrac{1}{4}; \ x_2 = \dfrac{5}{4}$
27	$\sqrt{3x - 5} + 3 = x$	$x = 7$
28	$\sqrt{4x^2 + 7x - 2} = x + 2$	$x_1 = -2; \ x_2 = 1$
29	$\sqrt{4x^2 - 7x - 6} = 9 - 2x$	$x = 3$
30	$3x + \sqrt{9x^2 - 46x} = 10$	*impossibile*
31	$\sqrt{2x + 5} = 3(x - 1)$	$x = 2$
32	$\sqrt{\dfrac{1}{5}x(3x - 1)} = -\dfrac{2}{7}(1 + 3x)$	$x = -5$
33	$\sqrt{x^2 + 3x - 6} = 2x - 6$	$x = 7$
34	$\sqrt{x^2 - 11} + 1 = x$	$x = 6$
35	$\sqrt{x^2 - 1} = x + 2$	$x = -\dfrac{5}{4}$
36	$4 + x - \sqrt{x^2 - 5x + 4} = 2x$	$x = 4$
37	$\sqrt{16 - x^2} = \dfrac{x}{2} + 2$	$x_1 = -4; \ x_2 = \dfrac{12}{5}$
38	$\sqrt{x - 2} + 5 = 5x$	*impossibile*
39	$\sqrt[3]{x^3 + 2x^2 - 1} = x + 1$	$x_1 = -2; \ x_2 = -1$
40	$\sqrt[3]{8x^3 + 20x + 7} = 2x + 1$	$x_1 = -\dfrac{1}{3}; \ x_2 = \dfrac{3}{2}$
41	$3\sqrt{3x} - 3 = 2\sqrt{3x}$	$x = 3$
42	$5x - 12\sqrt{x} + 7 = 0$	$x_1 = 1; \ x_2 = \dfrac{49}{25}$

Equazioni irrazionali

43	$\sqrt{4-3x}-\sqrt{x^2-x-1}=0$	$x_{1,2}=-1\pm\sqrt{6}$
44	$\sqrt{36+x}=18-\sqrt{x}$	$x=64$
45	$\sqrt{3(x^2-4)}=\sqrt{5x}$	$x_1=-\dfrac{4}{3}; \; x_2=3$
46	$\sqrt{2x^2-x-7}=\sqrt{x^2-3x-8}$	$x=-1$
47	$\sqrt{3-2x-x^2}=\sqrt{x^2-5x+4}$	$x_1=\dfrac{1}{2}; \; x_2=1$
48	$\sqrt{x+4ab}-\sqrt{x}=2a$	$x=(b-a)^2$
49	$\sqrt{2x-3a}=3\sqrt{a}-\sqrt{2x}$	$x=2a$
50	$\sqrt{2x-18}=3+\sqrt{x}$	$x=81$
51	$\sqrt{3x+28}=5+\sqrt{x-3}$	$x_1=12; \; x_2=7$
52	$\sqrt{32+x}-\sqrt{x-4}=2$	$x=68$
53	$\sqrt[3]{3x^2-5x+8}=\sqrt[3]{2x^2+2}$	$x_1=2; \; x_2=3$
54	$\sqrt[4]{3x^2-2x+25}=\sqrt{3-2x}$	$x=5-\sqrt{41}$
55	$\sqrt[3]{x-2}+\sqrt[3]{2x-1}=0$	$x=1$
56	$\sqrt{3x-5}-\sqrt{2x-5}=1$	$x_1=3; \; x_2=7$
57	$\sqrt{x-8}-10=-\sqrt{x-28}$	$x=44$
58	$\sqrt{2x+1}+1=2\sqrt{x-1}$	$x=2(2+\sqrt{2})$
59	$\sqrt{x-8}-10=\sqrt{x-28}$	*impossibile*
60	$\sqrt[3]{x-3}+\sqrt[3]{2x+4}=1$	$x=2$
61	$\sqrt{1+3x}-1=\sqrt{2x-1}$	$x_1=1; \; x_2=5$
62	$2\sqrt{x+16}-\sqrt{x-16}=10$	$x_1=20; \; x_2=\dfrac{340}{9}$
63	$\sqrt[3]{3-x}+\sqrt[3]{x-2}=1$	$x_1=2; \; x_2=3$

Equazioni irrazionali

64	$\sqrt{x+2} - \sqrt{x-3} - 1 = 0$	$x = 7$
65	$\sqrt{x+1} - \sqrt{x+6} = -1$	$x = 3$
66	$\sqrt[3]{2-3x} = -\sqrt[3]{3x+7} + 3$	$x_1 = -2; \; x_2 = \dfrac{1}{3}$
67	$\sqrt{x+7} - 2 = \sqrt{x-1}$	$x = 2$
68	$\sqrt{3-2x} = 2 - \sqrt{x^2+3}$	$impossibile$
69	$\sqrt[3]{2x-28} - \sqrt[3]{2x+28} = -2$	$x_{1,2} = \pm 18$
70	$\sqrt{x+3} - 2 = \sqrt{x-5}$	$x = 6$
71	$\sqrt{3-x} + \sqrt{1-x} = \sqrt{4-2x}$	$x_1 = 1; \; x_2 = 3$
72	$\sqrt{x+1} + \sqrt{x+6} = \sqrt{2x+7}$	$x_1 = -6; \; x_2 = -1$
73	$\sqrt{x-2} + \sqrt{3x-1} = 2\sqrt{\dfrac{x}{2}+2}$	$x = \dfrac{11\sqrt{2}}{4} - 1$
74	$\sqrt{x+5} - \sqrt{x} = \sqrt{2x-7}$	$x = 4$
75	$\sqrt{x+1} + \sqrt{x} = \sqrt{2x} + 1$	$x_1 = 0; \; x_2 = 1$
76	$\sqrt{x+2} = \sqrt{6-x} - \sqrt{5-x}$	$x = 1 - \dfrac{2}{5}\sqrt{55}$
77	$\sqrt{2x+6} = \sqrt{x+2} - \sqrt{x-2}$	$x = \sqrt{13}$
78	$\sqrt{2x-2} = \sqrt[4]{3x^2+5x+4}$	$x = 13$
79	$\sqrt[6]{3-3x} - \sqrt[3]{3x-1} = 0$	$x = \dfrac{2}{3}$
80	$\sqrt{3-2x} = \sqrt[4]{3x^2-2x+25}$	$x = 5 - \sqrt{41}$
81	$\dfrac{\sqrt{2}+\sqrt{x}}{\sqrt{2}-\sqrt{x}} = 1$	$x = 0$