1. Ecuacións exponenciais:

1. $2^x = 16$ $x = 4$
2. $5^x = 15625$ $x = 6$
3. $3^x = 243$ $x = 5$
4. $6^x = 1$ $x = 0$
5. $8^{3x-1} = 1$ $x = \frac{1}{3}$
6. $7^{x+2} = 343$ $x = 1$
7. $4^x = \frac{1}{256}$ $x = -4$
8. $10^{2+x} = 1$ $x = -2$
9. $2^{-x} = 8$ $x = -3$
10. $3^{2-x} = 1$ $x = 2$
11. $3^{2x} = 6561$ $x = 4$
12. $5^{2x-1} = 125$ $x = 2$
13. $3^{x+1} = 729$ $x = 5$
14. $5^{x-2} = 625$ $x = 6$
15. $3^{2x-1} = 2187$ $x = 4$
16. $9^{2x+1} = 729$ $x = 1$
17. $5^{x+1} = 0,2$ $x = -2$
18. $10^{4x+6} = 1$ $x = \frac{-3}{2}$
19. $2^x \cdot 2^{x+1} = 32$ $x = 2$
20. $3^x \cdot 3^{2x-3} = 3^5$ $x = \frac{8}{3}$
21. $27^{x-1} = 9^{x+3}$ $x = 9$
22. $2^{1-x} = 4^{2x}$ $x = \frac{1}{5}$
23. $2^{x^2-3x} = 16$ $x = 4, x = -1$
24. $5^{x^2-3x} = 625$ $x = 4, x = -1$
25. $2^{-1-x^2} = \frac{1}{32}$ $x = 2$ y $x = -2$
26. $11^{x^2-3x-37} = 1331$ $x = 8$ y $x = -5$

27. $6^{x^2+7x+9} = \frac{1}{6}$ — $x = -2, x = -5$

28. $5^{x^2-2x+4} = 125$ — $x = 1$

29. $\sqrt{3^{5x-11}} = 9$ — $x = 3$

30. $\sqrt[4]{4^{x+3}} = 4$ — $x = 1$

31. $\sqrt[3]{5^{2x+8}} = 25$ — $x = -1$

32. $\sqrt{2^{5x-7}} = \sqrt{2^{x-2}}$ — $x = 1{,}25$

33. $\sqrt{2^{x+5}} = \sqrt[3]{4^{x+2}}$ — $x = 7$

34. $\sqrt[3]{10^{2x+7}} = \sqrt{100^{x-1}}$ — $x = 10$

35. $2^{x+1} + 2^x + 2^{x-1} = 7$ — $x = 1$

36. $2^{2x+2} + 2^{x+3} = 320$ — $x = 3$

37. $3^{x+1} + 3^x + 3^{x-1} = 117$ — $x = 3$

38. $2^{2x} - 10 \cdot 2^x + 2^4 = 0$ — $x = 3$ y $x = 1$

39. $\frac{5^x - 5^{-x}}{2} = 3$ — $x = 6{,}16$

40. $e^x - 5e^{-x} + 4e^{-3x} = 0$ — $x = 0$ y $x = 0{,}69$

2. Máis exponenciais:

1. $5^x = 3$ — $x = 0{,}68$
2. $7^x = 512$ — $x = 3{,}21$
3. $0{,}2^x = 0{,}0016$ — $x = 4$
4. $9^x = 0{,}576$ — $x = -0{,}25$
5. $2^x = 3$ — $x = 1{,}5$
6. $4^x = 3$ — $x = 0{,}79$
7. $10^x = 7$ — $x = 0{,}85$
8. $10^x = 6$ — $x = 0{,}78$
9. $27 = 2^{3x}$ — $x = 1{,}58$
10. $3^x = 21$ — $x = 2{,}77$

3. Máis exponenciais:

1. $5^x = 3$ $x = 0{,}68$
2. $7^x = 512$ $x = 3{,}21$
3. $0{,}2^x = 0{,}0016$ $x = 4$
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7. $10^x = 7$ $x = 0{,}85$
8. $10^x = 6$ $x = 0{,}78$
9. $27 = 2^{3x}$ $x = 1{,}58$
10. $3^x = 21$ $x = 2{,}77$

4. Irracionais:

1. $\sqrt{x}+5=7$ R/4.
2. $5+3\sqrt{x}=8$ R/1.
3. $8+\sqrt[3]{x}=12$ R/64.
4. $2+5\sqrt[3]{x}=32$ R/216.
5. $\sqrt{x-8}=2$ R/12.
6. $5-\sqrt{3x+1}=0$ R/8.
7. $\sqrt{x+3}=\sqrt{5x-1}$ R/1.
8. $\sqrt{5x+1}=\sqrt{14x+2}$ R/$\frac{-1}{9}$.
9. $\sqrt{3x-1}=\sqrt{2x+1}$ R/2.
10. $\sqrt{2x+1}=\sqrt{x+5}$ R/4.
11. $\sqrt{4x+9}=\sqrt{8x+2}$ R/$\frac{7}{4}$.
12. $\sqrt{2x+2}=\sqrt{3x-1}$ R/3.
13. $\sqrt{4x-11}=7\sqrt{2x-29}$ R/15.
14. $x-\sqrt{x-1}=1$ R/1 y 2.
15. $3x=\sqrt{3x+7}-1$ R/$\frac{2}{3}$.
16. $2x=\sqrt{-2x+5}-1$ R/$\frac{1}{2}$.
17. $6x-\sqrt{18x-8}=2$ R/$\frac{2}{3}$ y $\frac{1}{2}$.
18. $\sqrt{x+2}-\sqrt{x-1}=1$ R/2.
19. $\sqrt{x-5}-\sqrt{4x-7}=0$ R/$\frac{2}{3}$.
20. $\sqrt{x}+\sqrt{x+7}=7$ R/9.
21. $\sqrt{2x+1}-\sqrt{x-3}=2$ R/4 y 12.
22. $\sqrt{2x+3}+\sqrt{x-2}=4$ R/3.

23. $\sqrt{3x-5}+\sqrt{3x-14}=9$ R/10.

24. $\sqrt{x+10}-\sqrt{x+19}=-1$ R/6.

25. $\sqrt{5-x}+\sqrt{x+3}=0$ R/S=$\emptyset$.

26. $\sqrt{5x+19}-\sqrt{5x}=-1$ R/S=$\emptyset$.

27. $\sqrt{x-2}+5=\sqrt{x+53}$ R/11.

28. $\sqrt{9x-14}=3\sqrt{x+10}-4$ R/15.

29. $\sqrt{x-16}-\sqrt{x+8}=-4$ R/17.

30. $\sqrt{5x-1}+3=\sqrt{5x+26}$ R/2.

31. $13-\sqrt{13+4x}=2\sqrt{x}$ R/9.

32. $\sqrt{x-4}+\sqrt{x+4}=2\sqrt{x-1}$ R/5.

33. $\sqrt{9x+7}-\sqrt{x}-\sqrt{16x-7}=0$ R/1.

34. $\sqrt{x+5}+\sqrt{x}-\sqrt{4x+9}=0$ R/4.

35. $\sqrt{14-x}+\sqrt{11-x}=\frac{3}{\sqrt{11-x}}$ R/10.

36. $\sqrt{9x+10}-2\sqrt{x+3}=\sqrt{x-2}$ R/6.

37. $6\sqrt{x+5}-3=4\sqrt{x+5}+17$ R/95.

38. $7+\sqrt[3]{5x-2}=9$ R/2.

39. $15-\sqrt[3]{7x-1}=12$ R/4.

40. $\sqrt{x^2+12}-x=2$ R/2.

41. $\sqrt{2x^2+x+2}=\sqrt{2x+3}$ R/1 o $\frac{-1}{2}$.

42. $\sqrt{9x^2-5}-3x=-1$ R/1.

43. $\sqrt{x^2-2x+1}=9-x$ R/5.

44. $\sqrt{5x^2-4x+3}-x=1$ R/1 y $\frac{1}{2}$.

45. $3x-\sqrt{6x^2-x+13}=1$ R/3.

46. $\sqrt{x^2+2x+1}-\sqrt{4x+1}=0$ R/0 y 2.

5. Máis rracionais:

1. $\frac{\sqrt{x+5}-4}{\sqrt{2x+1}-2} = -1$
2. $\frac{\sqrt{3x-2}+1}{\sqrt{x+2}-1} = 3$
3. $\frac{\sqrt{x+1}+1}{\sqrt{2x-2}+4} = \frac{1}{2}$
4. $\frac{\sqrt{3x+10}+1}{2-\sqrt{x+3}} = 3$
5. $\sqrt{x+4} - \sqrt{x-1} = \frac{2}{\sqrt{x-1}}$
6. $\sqrt{x} + \sqrt{x+5} = \frac{10}{\sqrt{x}}$
7. $\sqrt{4x-11} + 2\sqrt{x} = \frac{55}{\sqrt{4x-11}}$
8. $\sqrt{x} - \sqrt{x-7} = \frac{4}{\sqrt{x}}$
9. $\frac{\sqrt{x}-2}{\sqrt{x}+4} = \frac{\sqrt{x}+1}{\sqrt{x}+13}$
10. $\frac{6}{\sqrt{x+8}} = \sqrt{x+8} - \sqrt{x}$
11. $\sqrt{x-3} + \frac{8}{\sqrt{x+9}} = \sqrt{x+9}$
12. $\frac{\sqrt{x}+4}{\sqrt{2}-2} = \frac{\sqrt{x}+11}{\sqrt{x}-1}$
13. $2\sqrt{x+6} - \sqrt{4x-3} = \frac{9}{\sqrt{4x-3}}$
14. $\frac{\sqrt{x}-2}{\sqrt{x}+2} = \frac{2\sqrt{x}-5}{2\sqrt{x}-1}$
15. $\sqrt{x+14} - \sqrt{x-7} = \frac{6}{\sqrt{x-7}}$
16. $\sqrt{x+3} + \frac{6}{\sqrt{x+3}} = 5$
17. $\sqrt{x} + \frac{4}{\sqrt{x}} = 5$
18. $2\sqrt{x} = \sqrt{x+7} + \frac{8}{\sqrt{x+7}}$
19. $\sqrt{2x + \sqrt{4x-3}} = 3$
20. $\sqrt{x + \sqrt{x+8}} = 2\sqrt{x}$

6. Logaritmicas:

1. $log_3\ (x-4)=2$ R/13.
2. $log_2\ (x-5)=4$ R/21.
3. $log_{10}\ (2x+50)=2$ R/25.
4. $log_9\ (x)=\frac{3}{2}$ R/27.
5. $log_6\ (2x-3)=log_6\ 12-log_6\ 3$ R/3,5.
6. $log_4\ (3x+2)=log_4\ 5+log_4\ 3$ R/$4,\overline{3}$.
7. $2\ log_3\ x=4log_3\ 8$ R/64.
8. $3log\ x=3log\ 5$ R/5.
9. $ln\ (-4-x)+ln\ 3=ln\ (2-x)$ R/$^{-}7$.
10. $ln\ x+ln\ (x+4)=ln\ 15+ln\ 3$ R/5.
11. $log_4\ (x)=\frac{^{-}3}{2}$ R/$\frac{1}{8}$.
12. $log_5\ (x^2)=^{-}\ 2$ R/$\pm\frac{1}{5}$.
13. $log_{10}\ (x^2)=^{-}\ 4$ R/$\pm\frac{1}{100}$.
14. $log_6\ (2x-3)=log_6\ 12-log_6\ 3$ R/$\frac{7}{2}$.
15. $log_3\ (4x-5)=log_3\ (2x+1)$ R/3.
16. $log\ (5x^2-14x+1)=log\ (4x^2-4x-20)$ R/3 y 7.
17. $2log_3\ (x)=3log_3\ 5$ R/$5\sqrt{5}$.
18. $log_5\ (2x+3)=log_5\ 11+log_5\ 3$ R/15.

19. $log_3\ (2x-3)+log_3\ (x+3)=4$ R/6.

20. $log_2\ (16x)-log_2\ (x+1)=3log_2\ 4$ R/$\emptyset$

21. $log_5\ (x)+log_5\ (x+2)=\frac{1}{2}log_5\ 9$ R/1.

22. $log_{10}\ (x^2)=log_{10}\ (x)$ R/1.

23. $\frac{1}{2}log_5\ (x-2)=4log_5\ 2-\frac{3}{2}log_5(x-2)$ R/6.

24. $log_2\ (x+1)=3-log_2\ (x-1)$ R/3.

25. $log_2\ x+log_2\ (x-2)=3$ R/4.

26. $log_4\ (x)-3log_4\ 2=log_4\ 5$ R/40.

27. $log_3\ (7-x)-log_3\ (1-x)=1$ R/$^-2$.

28. $log_5\ (x+12)=log_5\ x+2$ R/$\frac{1}{2}$.

29. $log_3\ (x+4)+log_3\ (x-2)=3$ R/5.

30. $log_2\ (x-1)+log_2\ (x+2)=2$ R/2.

31. $log_3\ (x+2)+log_3\ (x+4)=1$ R/$^-1$..

32. $log\ (2x+4)-log\ (x-1)=1$ R/1,75.

33. $log\ (3x+1)-log\ (x-3)=3$ R/5.

34. $log\ (x)+log\ (x-9)=1$ R/10.

35. $log\ (x+2)-log\ (4x+3)+log\ x=0$ R/3.

36. $log\ (3x+5)+log\ (x+5)=3$ R/15.

37. $log\ (x+2)+log\ (x-1)=1$ R/3.

38. $\frac{log\ (35-x^3)}{log\ (5-x)}=3$ R/2 y 3.

39. $log\ (x+6)-\frac{1}{2}log\ (2x-3)=2-log\ 25$ R/6 y 14.

40. $log\ (\frac{1}{2}+x)=log\ \frac{1}{2}-log\ x$ R/$\frac{1}{2}$.

7. Mais logaritmicas:

1. $\sqrt{log\ x} = log\ \sqrt{x}$ R/1 y 10000.
2. $log_2\ (9^{x-1} + 7) = 2 + log_2\ (3^{x-1} + 1)$ R/1 y 2.
3. $log\ (x^{log\ x}) = log\ (7 - 2log\ x) - log\ 5$ R/10.
4. $\frac{log\ (2x)}{log\ (4x-15)} = 2$ R/$\frac{9}{2}$.
5. $\frac{1}{5-log\ x} + \frac{2}{1+log\ x} = 1$ R/10^2 y 10^3.
6. $log\ (x^3) - \frac{12}{log\ x} = 5$ R/10^3 y $10^{\frac{-4}{3}}$.
7. $log\ \sqrt{7x+5} + \frac{1}{2}log\ \sqrt{2x+7} = 1 + log\ 4,5$ R/10.
8. $x^{log\ (x)-1} = 100$ R/10 y 0,1.
9. $log\ (x-5) - \frac{1}{2}log\ (3x-20) = log\ 2$ R/15 y 7.
10. $\sqrt{x^{log\ \sqrt{x}}} = 10$ R/100 y 0,01.

8. Valor absoluto:

1. $|x-4|=3$
2. $|x-5|=16$
3. $|2x+3|=7$
4. $|3x|=6$
5. $|x-2|=3$
6. $|2x-3|=9$
7. $|x-1|=2x-1$
8. $|3x+2|=5-x$
9. $|5x+4|=2x+1$
10. $|-6x+1|=4x-7$
11. $|x+4|=|x+2|$
12. $|x-4|=|x-2|$
13. $|3-x|=|1+x|$
14. $|x+3|<8$
15. $|x-6|<4$
16. $|x-1|>5$
17. $|2x-5|\geq 3$
18. $|2x-3|<5$
19. $|3x-5|>4$
20. $|4x-3|\geq 1$
21. $|3x+1|>15$
22. $|\frac{2x}{3}-1|<2$
23. $|\frac{2(x+5)}{3}|\leq \frac{4}{5}$