

Disequazioni esponenziali

Disequazioni immediate

1) $4^x > -5$ ($\forall x \in \mathbb{R}$) 2) $6^{2x} < -5$ ($\exists x \in \mathbb{R}$) 3) $3^x > 0$ ($\forall x \in \mathbb{R}$) 4) $7^{3x} < 0$ ($\exists x \in \mathbb{R}$) 5) $3^x + 7 > 0$ ($\forall x \in \mathbb{R}$)

6) $7^{3x} + 3 < 0$ ($\exists x \in \mathbb{R}$) 7) $2^{-x} + 2^x > 0$ ($\forall x \in \mathbb{R}$) 8) $2 \cdot 4^{x-1} < 0$ ($\exists x \in \mathbb{R}$) 9) $4^x + 2\sqrt{2} > 0$ ($\forall x \in \mathbb{R}$)

- | | | |
|--|--------------------------------|---|
| 1. $3^x > 27$ | 2. $18^{2x^2-3x+1} > 1$ | 3. $(5^x)^x < 5$ |
| 4. $\left(\frac{1}{2}\right)^{-x-1} > \left(\frac{1}{2}\right)^{x+1}$ | 5. $4^x - 5 \cdot 2^x + 4 > 0$ | 6. $5^{x+1} < 25^{x-1}$ |
| 7. $\left(\frac{1}{3}\right)^{x+3} > 9$ | 8. $4^{x^2-2x-3} > 2$ | 9. $2^{x+2} + 4^{x+2} > 272$ |
| 10. $\left(\frac{1}{2}\right)^{\sqrt{3x-2}} > 4^{1-x}$ | | 11. $3^x + \frac{1}{3^{x+1}} > \frac{28}{9}$ |
| 12. $3^{2+x-2x^2} < 3^{(2-x)^2}$ | | 13. $\frac{25^{1-x}}{(5^{x-2})^{3+x}} < \frac{25^{-2x} \cdot 5^{-9}}{(5^{2-x})^{2x-3}}$ |
| 14. $\sqrt{8} \cdot 2^x - 2^{2x+\frac{1}{2}} : 2 < (2+2^x) : \sqrt{2}$ | | 15. $2^{x+1} + \frac{8}{2^x} \geq 17$ |
| 16. $\frac{\left(\frac{4}{3}\right)^x - \frac{16}{9}}{3^{2x} - 4 \cdot 3^x + 3} < 0$ | | 17. $\frac{4^x + 2^{x+1} - 80}{8 \cdot 2^x - 2} < 0$ |
| 18. $\frac{\sqrt[4]{3^{x^2}}}{3^x} > \frac{\sqrt{3}}{9}$ | | 19. $\frac{2^{5x+1} \cdot 16^{x-1}}{8^{x+1}} < 4^{2x-1}$ |
| 20. $(2+2^x)^2 - (2-2^x)^2 \leq 4$ | | 21. $2^{\sqrt{6x-x^2}} < 2^{3-2x}$ |
| 22. $4 \cdot \left(\frac{3}{2}\right)^{2x} + 15 \cdot \left(\frac{3}{2}\right)^x < 19$ | | 23. $\frac{3^{2x} - 3^{x+1}}{9^x - 1} \leq 0$ |
| 24. $3^{2x} - 10 \cdot 3^x + 9 < 0$ | | 25. $5^{x+1} + 5^{1-x} - 26 > 0$ |
| 26. $5^x (5^x + 1) > 5^{x+2} + 25$ | | 27. $2^{2x+1} - 9 \cdot 2^x + 4 < 0$ |
| 28. $17 \cdot \sqrt{2^{x+1}} > 34 \cdot \sqrt[3]{4^{x-3}}$ | | 29. $-4^x - 3 \cdot 2^x > 2^{2x} - 2^x$ |
| 30. $\frac{1}{3^x-9} - \frac{1}{3^x+1} > 0$ | | 31. $\frac{2^{2x} - 3 \cdot 2^{x+1} + 8}{3-x} > 0$ |
| 32. $\frac{\left(\frac{2}{3}\right)^{x-1} - 1}{\sqrt{2} - \sqrt[3]{2^{x-1}}} < 0$ | | 33. $4^x - 3 \cdot 2^x > -2^{2x} - 5$ |
| 34. $2^{2x} + 3 \cdot 2^{x+1} + 5 < 0$ | | 35. $3^{2x} + 4 \cdot 3^{x+1} + 27 > 0$ |
| 36. $1 + 6 \cdot 2^{-x} + \frac{9}{2^{2x}} < 0$ | | 37. $\left(\frac{5}{3}\right)^{2x} - 4 \left(\frac{5}{3}\right)^x + 4 > 0$ |
| 38. $\left(\frac{3}{8}\right)^{\sqrt{2x^2-5x+3}} < \left(\frac{3}{8}\right)^{x-\frac{5}{2}}$ | | 39. $\frac{2^{-2x} - 2^{x+1}}{2^{x^2} - 16} \geq 0$ |
| 40. $\frac{\left(\frac{2}{3}\right)^{x-1} - 1}{\sqrt{2} - \sqrt[3]{2^{x-1}}} < 0$ | | 41. $\left(\frac{8}{3}\right)^{\sqrt{x^2-4x+3}} < \left(\frac{8}{3}\right)^{1-x}$ |

Soluzioni:

1. $x > 3$ 2. $x < \frac{1}{2} \cup x > 1$ 3. $-1 < x < 1$ 4. $x > -1$ 5. $x < 0 \cup x > 2$ 6. $x > 3$ 7. $x < -5$ 8. $x < \frac{2-3\sqrt{2}}{2} \cup x > \frac{2+3\sqrt{2}}{2}$
9. $x > 2$ 10. $x \geq 2$ 11. $x < -2 \cup x > 1$ 12. $x < \frac{2}{3} \cup x > 1$ 13. $x < -1 \cup x > \frac{11}{3}$ 14. $x < 0 \cup x > 1$ 15. $x \leq -1 \cup x \geq 3$
16. $x < 0 \cup 1 < x < 2$ 17. $-2 < x < 3$ 18. $\forall x$ 19. $x < 2$ 20. $x \leq -1$ 21. $x < 0 \cup x > 1$ 22. $x < 0$ 23. $0 < x < 1$ 24. $0 < x < 2$
25. $x < -1 \vee x > 1$ 26. $x > 2$ 27. $-1 < x < 2$ 28. $x < 9$ 29. $\exists x$ 30. $x > 2$ 31. $x < 1 \vee 2 < x < 3$ 32. $1 < x < 5/2$ 33. $\forall x$ 34. $\exists x$
35. $\forall x$ 36. $\exists x$ 37. $\forall x \neq 1$ 38. $x \leq 1 \vee x \geq 3/2$ 39. $x < -2 \vee -1/3 \leq x < 2$ 40. $1 < x < 5/2$ 41. $\exists x$