
Solving Exponential Equations & Inequalities

Solving Exponential Equations

Step 1 – Isolate the base

Step 2 – Write both sides of the equation as exponential expressions with LIKE bases

Step 3 – Set the EXPONENTS equal to each other (or use the same inequality)

Step 4 – Solve for the unknown

1. $3^{2x-5} = 3^{x+3}$

2. $2^{7x-6} > 2^{5x+2}$

3. $3^{2x-5} = 27^{x+2}$

4. $4^{3x} = 2^{x+1}$

5. $216 = 36^{2x+3}$

6. $16^x \leq 4^{3x-2}$

7. $4^x = \left(\frac{1}{2}\right)^{x-3}$

8. $81 = \left(\frac{1}{3}\right)^{5x-6}$

