Solving Equations with Indices GREEN

Solve the following equations with indices. Remember, you can't equate the indices until the bases are the same!

Q1. $7^{4x-5} = 7^{11}$	Q2. $2^{2x+3} = 2^{4x-1}$	Q3. $3^{8x+2} = 3^{5x+14}$	Q4. $8^{6x-3} = 8^{7x+2}$
Q5. $9^{4x-6} = 81$	Q6. $4^{6x+1} = 64$	Q7. $3^{x-4} = 9^{x+1}$	Q8. $9^{2x+1} = 27$
Q9. $27^{x} = 9^{x+1}$	Q10. $25^{x-1} = 125^{x+1}$	Q11. $2^{x} \times 2^{4x+6} = 2^{21}$	Q12. $(4^{x})^{2} \div 4^{5} = 4^{9}$

Solving Equations with Indices AMBER

Solve the following equations with indices. Remember, you can't equate the indices until the bases are the same!

Q1. $7^{4x-5} = 7^{11}$	Q2. $2^{2x+3} = 2^{4x-1}$	Q3. $3^{8x+2} = 3^{5x+14}$	Q4. $8^{6x-3} = 8^{7x+2}$
Q5. $9^{4x-6} = 81$ ← Change the base!	Q6. $4^{6x+1} = 64$	Q7. $3^{x-4} = 9^{x+1}$	Q8. $9^{2x+1} = 27$ Change both bases!
Q9. $27^{x} = 9^{x+1}$	Q10. $25^{x-1} = 125^{x+1}$	Q11. $2^{x} \times 2^{4x+6} = 2^{21}$ Simplify indices first!	Q12. $(4^{x})^{2} \div 4^{5} = 4^{9}$

Solving Equations with Indices RED

Solve the following equations with indices. Remember, you can't equate the indices until the bases are the same!

Q1. $7^{4x-5} = 7^{11}$ $4x-5=11$	Q2. $2^{2x+3} = 2^{4x-1}$ $2x+3=4x-1$	Q3. $3^{8x+2} = 3^{5x+14}$	Q4. $8^{6x-3} = 8^{7x+2}$
Q5. $9^{4x-6} = 81$ ← Change the base! $9^{4x-6} = 9^{\square}$	Q6. $4^{6x+1} = 64$ $4^{6x+1} = 4^{\square}$	Q7. $3^{x-4} = 9^{x+1}$	Q8. $9^{2x+1} = 27$ Change both bases! $(3^{\square})^{2x+1} = 3^{\square}$
Q9. $27^{x} = 9^{x+1}$	Q10. $25^{x-1} = 125^{x+1}$	Q11. $2^{x} \times 2^{4x+6} = 2^{21}$ Simplify indices first! $2^{\square} = 2^{21}$	Q12. $(4^{x})^{2} \div 4^{5} = 4^{9}$ $4^{\square} = 4^{9}$