Main Ideas/Questions	Notes/Examples	
SOLVING EXPONENTIAL EQUATIONS	①	Use the properties of exponents to **SIMPLIFY** each side of the equation.
	②	Rewrite the equation so both sides have the **SAME BASE**.
	③	Drop the bases and **SET THE EXPONENTS EQUAL TO EACH OTHER**.

Type 1 – Equations with a Common Base

1. $2^{x+1} = 2^9$	**2.** $5^{4n+5} = 5^{n-7}$
3. $3^k \cdot 3^{k+2} = 3^{5k-1}$	**4.** $10^{-4} \cdot 10^9 = 10^{v+4} \cdot 10^{2v-11}$

Type 2 – Equations without a Common Base

5. $6^{2x-10} = 36$	**6.** $2^{p-7} = 8$
7. $7^{4x+11} = \frac{1}{7}$	**8.** $32 = 2^{2m-9}$
9. $27^{2x+6} = 3^{2x}$	**10.** $4^{y+2} = 16^{y-3}$

11. $125^{y} = 25$	**12.** $16^{3x} = 8^{x+2}$
13. $4^{3x} = 8^{x-1}$	**14.** $81^{2x+5} = \left(\frac{1}{3}\right)^{2x}$
15. $8^{2a-1} = 32^{2a+1}$	**16.** $27^{2x} = 243^{x-2}$
17. $64 = 4 \cdot 4^{4x}$	**18.** $9^{2x+4} \cdot 9^{2x} = \frac{1}{81}$
19. $\frac{1}{7} = 49^{x-5} \cdot 7^{x-9}$	**20.** $4^{2x} \cdot \frac{1}{16} = 4^{6x+18}$