

NAME _____

DATE _____

ALGEBRA II WORKSHEET: SOLVING EXPONENTIAL EQUATIONS

Solve each equation for the variable.

1. $3^{x-5} = 3^7$

2. $11^{2x+4} = 11^{-x+6}$

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

4. $5^{3x-4} = 125$

5. $4^{2x+5} = 1$

6. $3^{x^2-4} = 1$

7. $3^{x+7} = 81$

8. $32 = 32^{x-5}$

9. $4^{3x+2} = 16$

10. $9^{x-2} = 27^{3x+5}$

11. $4^x = 16^{x+5}$

12. $7^{-y+2} = 49^{y-4}$

13. $25^{a-4} = 125^a$

14. $\left(\frac{2}{3}\right)^{2x+5} = \frac{9}{4}$

15. $4^c = \left(\frac{1}{2}\right)^{c-5}$