Name _____ Date _____ Pd ____

6.5 Practice WS

In Exercises 1–15, solve the equation. Check your solution.

1. $3^{4x} = 3^{12}$

2. $8^{x+5} = 8^{20}$

3. $6^{4x-5} = 6^{2x}$

4. $5^{6x-3} = 5^{-3+4x}$

5. $4^{2x+11} = 1024$

6. $8^{3-2x} = 512$

7. $4^{7-x} = 256$

8. $49^{x-2} = 343$

9. $36^{6x-1} = 6^{5x}$

10. $9^{x-4} = 81^{3x}$

11. $64^{x+1} = 512^{x}$

12. $6^{2x} = 36^{2x+1}$

13. $\left(\dfrac{1}{7}\right)^x = 2401$

14. $\dfrac{1}{512} = 2^{3x-1}$

15. $25^{2-2x} = \left(\dfrac{1}{625}\right)^{x+1}$

In Exercises 16–21, use a graphing calculator to solve the equation.

16. $3^{x+3} = -9$

17. $\left(\dfrac{1}{4}\right)^{-x-1} = 18$

18. $3^x = -2^{-x+1}$

19. $2^{x+2} = 5^{x-3}$

20. $7^{-x+1} = -4^{x-1}$

21. $\dfrac{1}{4}x + 1 = \left(\dfrac{2}{3}\right)^{2x-1}$

22. You deposit $1000 in a savings account that earns 5% annual interest compounded yearly.

   a. Write an exponential equation to determine when the balance of the account will be $1500.

   b. Solve the equation.