

Secondary Math III
Solving Exponential
Assignment 10.3

Name _____
Period _____

For problems 1-2, determine whether each x -value is a solution of the equation. Show work.

1. $4^{2x-7} = 64$

a. $x = 5$

b. $x = 2$

2. $\log_3(x+4) = 2$

a. $x = -1$

b. $x = 5$

Solve each exponential equation for x . Round approximate answers to three decimal places.

3. $4^x = 8$

4. $3e^x + 16 = 40$

5. $2^{x+1} = 14$

6. $3^x = 19$

7. $6^x + 15 = 40$

8. $2 \cdot 5^x = 60$

9. $8^{2x-4} = 4$

10. $1000e^{-4x} = 75$

11. $8^{3x} = 360$

12. $3^{x+3} - 3^{2x} = 0$

13. $e^{x^2-4} = e^{x+2}$

14. $e^x = e^{3x-2}$

15. $e^{2x} = e^{x^2-8}$

16. $5^{-2x} = 5^{4x+1}$

17. $4^x = 4^{x^2-2}$

Review:

Find the domain of the function: (Hint: Unit 9 Day 3)

18. $y = \log_3(4x - 5)$

19. $y = \ln(x + 5)$

20. $f(x) = 5^x - 1$

Use the properties of logarithms to simplify the expression:

21. $\log_7\left(\frac{1}{49}\right)$

22. $2\ln e^x - \ln e$

23. $\log\sqrt{100}$

Expand or condense each expression:

24. $\log_3 5x^2$

25. $\ln\frac{3x}{y}$

26. $\ln x - 3\ln y + 2\ln z$

27. $\log_4 8 - \log_4 x$

ACT Practice:

28. $y = 2^x$

If $y = 3$, approximately what is x ?

- A. 0.6309
- B. 1.8580
- C. 2.0000
- D. 1.5850
- E. 1.3454