

Algebra II Class Worksheet #3 Unit 11 page 1

Use the common base method to solve each of the equations. Show your work neatly organized.

1. $8^{(3x+1)} = 16$

2. $125^{(2x-1)} = 25^{(x+1)}$

Use logarithms to solve each of the equations. Express your answers rounded to the nearest hundredth. Show your work neatly organized.

3. $5^{(2x-3)} = 3$

4. $2^{(3x+2)} = e^{(x+1)}$

Solve for x. Express irrational solutions rounded to the nearest hundredth.

5. $\text{Log}_2 x = 3$

6. $\text{Log}_2 x = -3$

7. $\text{Log}_4 x = 2.5$

8. $\text{Log}_4 x = -1.5$

9. $\text{Log}_3 x = 1.5$

10. $\text{Log } x = 0.8$

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Use the change of base formula to evaluate each of the following logarithms. Express your answers rounded to the nearest hundredth.

11. $\text{Log}_5 8 =$ _____

12. $\text{Log}_5 3 =$ _____

13. $\text{Log}_2 7 =$ _____

14. $\text{Log}_8 200 =$ _____

Solve the following problems. Express your answers rounded to the nearest tenth of a year.

15. \$500 is invested in an account that pays interest at an annual rate of 3% compounded monthly. How long will it take for the value of the account to reach \$600?

16. Money is invested in an account that pays interest at an annual rate of 5% compounded continuously. How long will it take for the value of the account to double?

